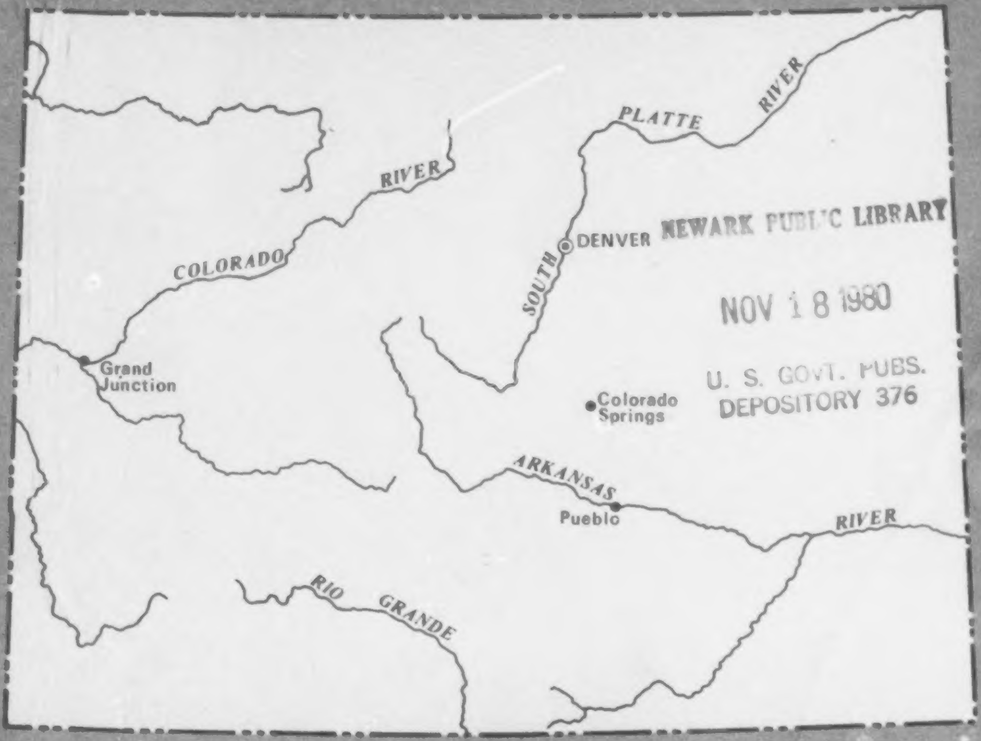
80-436

WATER-QUALITY CHARACTERISTICS OF SELECTED LAKES AND RESERVOIRS IN COLORADO

U.S. GEOLOGICAL SURVEY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Open-File Report 80-436

Prepared in cooperation with the
Colorado Department of Natural Resources
Colorado Water Conservation Board

U.S. DEPARTMENT OF THE INTERIOR
March 3, 1849

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WATER-QUALITY CHARACTERISTICS OF SELECTED LAKES AND RESERVOIRS IN COLORADO

By Linda J. Britton and Dennis A. Wentz

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March 3, 1849

Lakewood, Colorado

1980

UNITED STATES DEPARTMENT OF THE INTERIOR

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CONTENTS

Page
Metric conversions--- V
Abstract--- 1
Introduction--- 3
    Purpose and Scope--- 3
    Acknowledgements--- 4
Methods and significance of measured variables--- 4
    Temperature and thermal stratification--- 4
    Light transparency--- 7
    Dissolved oxygen--- 7
    Specific conductance--- 8
    pH--- 9
    Chemical and biological constituents--- 9
        Major chemical constituents--- 10
        Trace constituents--- 11
        Major plant nutrients--- 11
        Phytoplankton--- 13
        Trophic status--- 13
Results--- 17

Adams County:

        Barr Lake--- 20

Alamosa County:

        San Luis Lake--- 22

Archuleta County:

        Navajo Reservoir--- 24

Baca County:

        Two Buttes Reservoir--- 26

Boulder County:

        Gross Reservoir--- 28
        Terry Lake--- 30

Conejos County:

        La Jara Reservoir--- 32
        Platoro Reservoir--- 34
        Terrace Reservoir--- 36

Crowley County:

        Lake Meredith--- 38

Custer County:

        De Weese Reservoir--- 40

Delta County:

        Crawford Reservoir--- 42
        Garnet Mesa Reservoir (Sweitzer Lake)--- 44

Denver County:

        Marston Lake--- 46

Douglas County:

        Cheesman Lake--- 48

Eagle County:

        Ruedi Reservoir--- 50

Garfield County:

        Rifle Gap Reservoir--- 52

CONTENTS

Page

Results--Continued:
  Grand County:
    Grand Lake---------- 54
    Lake Granby---------- 56
    Shadow Mountain Lake---------- 58
    Williams Fork Reservoir---------- 60
    Willow Creek Reservoir---------- 62
  Gunnison County:
    Blue Mesa Reservoir---------- 64
    Paonia Reservoir---------- 66
    Taylor Park Reservoir---------- 68
  Hinsdale County:
    Continental Reservoir---------- 70
    Lake San Cristobal---------- 72
  Jackson County:
    Big Creek Lake (Lower)---------- 74
    East Delaney Lake---------- 76
    North Delaney Lake---------- 78
    South Delaney Lake---------- 80
    Lake John---------- 82
  Jefferson County:
    Ralston Reservoir---------- 84
    Standley Lake---------- 86
  Kiowa County:
    Neenoshe Reservoir---------- 88
  Lake County:
    Turquoise Lake---------- 90
    Twin Lakes Reservoir---------- 93
  La Plata County:
    Electra Lake---------- 96
    Lemon Reservoir---------- 98
    Vallecito Reservoir---------- 100
  Larimer County:
    Carter Lake---------- 102
    Horsetooth Reservoir---------- 104
  Logan County:
    North Sterling Reservoir (Point of Rocks Reservoir)---------- 106
  Mesa County:
    Anderson Reservoir No. 1---------- 108
    Bonham Reservoir---------- 110
    Cottonwood Lake No. 1---------- 112
    Hallenbeck Reservoir (Purdy Mesa Reservoir)---------- 118
    Juniata Reservoir---------- 120
    Vega Reservoir---------- 122
  Montrose County:
    Morrow Point Reservoir---------- 124

CONTENTS

Page

Results--Continued:
  Park County:
    Antero Reservoir-- 126
    Elevenmile Canyon Reservoir--- 128
  Rio Blanco County:
    Big Beaver Reservoir (Lake Avery)----------------------------------- 130
  Routt County:
    Steamboat Lake-- 132
  Summit County:
    Dillon Reservoir-- 134
    Green Mountain Reservoir-- 136
References-- 138

ILLUSTRATIONS

Page

Figure 1. Map of Colorado showing location of lakes and reservoirs studied-- 2
2. Seasonal thermal profiles of a temperate-zone lake--------------- 6

TABLE

Page

Table 1. Summary of trophic status of lakes and reservoirs in Colorado----- 15

METRIC CONVERSIONS

Multiply inch-pound unit	*By*	*To obtain metric unit*
inch (in.)	25.40	millimeter
foot (ft)	0.3048	meter
mile (mi)	1.609	kilometer
acre	0.4047	square hectometer
square mile (mi^2)	2.590	square kilometer
acre-foot (acre-ft)	0.001233	cubic hectometer

WATER-QUALITY CHARACTERISTICS OF SELECTED LAKES AND RESERVOIRS IN COLORADO

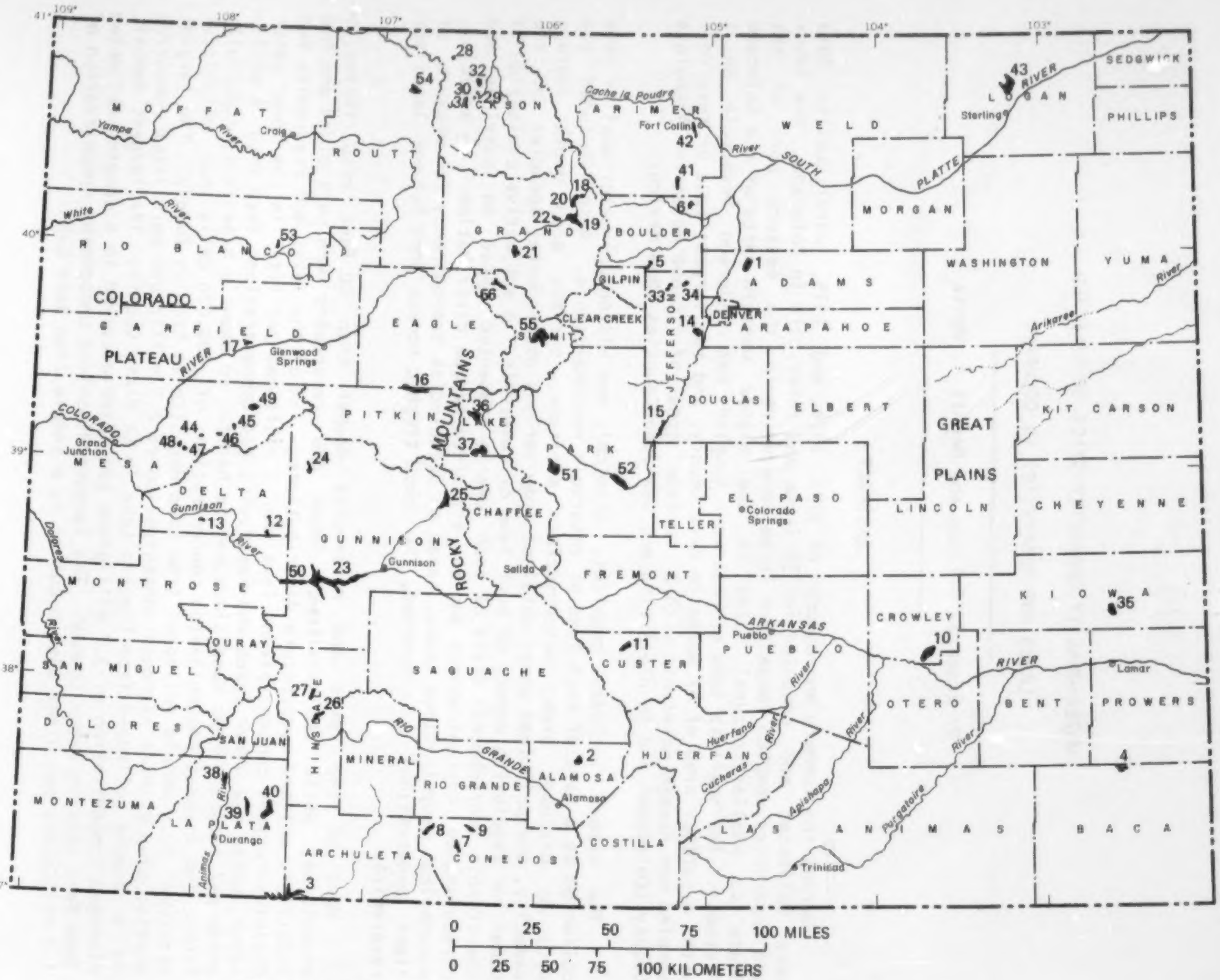
By Linda J. Britton and Dennis A. Wentz

ABSTRACT

During the summers and autumns of 1973, 1974, and 1975, water-quality data were collected and compiled for 56 lakes and reservoirs in Colorado. The lakes and reservoirs sampled range from large reservoirs in the eastern part of the State to smaller natural lakes in the higher western parts of the Colorado Plateaus. The smallest lake or reservoir sampled was Anderson Reservoir No. 1 with a surface area of 47 acres in Mesa County, and the largest lake or reservoir sampled was Navajo Reservoir with a surface area of 15,600 acres in Archuleta County (Colorado) and in Rio Arriba and San Juan Counties (New Mexico).

The report includes physical, chemical, and biological water-quality data collected as a part of each lake or reservoir reconnaissance. Also included are data on drainage area, water-surface altitude, surface area, depth, storage capacity, and principal uses, obtained from various governmental agencies or the owner or regulating agency of each lake or reservoir. A subjective evaluation of the trophic (enrichment) state of each lake is presented based on nutrient and phytoplankton concentrations and the dissolved-oxygen distribution. In addition, a numerical trophic-state index, based on Secchi-disk transparency (a measure of light penetration) is reported, to show trophic comparisons between lakes and reservoirs.

Most of the lakes and reservoirs deeper than 20 feet were thermally stratified, while the shallower lakes and reservoirs were well mixed and had relatively uniform temperature distributions. Ten of the lakes and reservoirs had dissolved-oxygen concentrations less than 1 milligram per liter in the lower water layer, while six other lakes and reservoirs had concentrations less than 4 milligrams per liter. These conditions may be harmful to aquatic organisms, especially fish. The largest phytoplankton concentration of 300,000 cells per milliliter occurred in a sample collected from Lake Meredith in Crowley County. The largest nitrite plus nitrate nitrogen concentration of 2.1 milligrams per liter occurred in a sample collected from Electra Lake in La Plata County. The largest ammonia nitrogen concentration of 3.7 milligrams per liter occurred in a sample collected from Barr Lake in Adams County. The largest dissolved phosphorus concentration of 1.1 milligrams per liter also occurred in a sample from Barr Lake.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YUMA
GARFIELD
EAGLE
SUMMIT
GILPIN
CLEAR CREEK
JEFFERSON
DENVER
ADAMS
ARAPAHOE
MESA
PITKIN
LAKE
DOUGLAS
ELBERT
KIT CARSON
DELTA
GUNNISON
CHAFFEE
PARK
TELLER
EL PASO
LINCOLN
CHEYENNE
MONTROSE
FREMONT
KIOWA
OURAY
SAN MIGUEL
SAGUACHE
CUSTER
PUEBLO
CROWLEY
OTERO
BENT
PROWERS
DOLORES
SAN JUAN
HINSDALE
MINERAL
RIO GRANDE
ALAMOSA
HUERFANO
MONTEZUMA
LA PLATA
ARCHULETA
CONEJOS
COSTILLA
LAS ANIMAS
BACA
COLORADO PLATEAU
ROCKY MOUNTAINS
GREAT PLAINS
Craig
Fort Collins
Sterling
Glenwood Springs
Grand Junction
Denver
Colorado Springs
Gunnison
Salida
Pueblo
Lamar
Alamosa
Durango
Trinidad
Yampa River
White River
Cache la Poudre
SOUTH PLATTE RIVER
COLORADO RIVER
Gunnison River
Dolores River
Arikaree River
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0 25 50 75 100 MILES
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Figure 1.--Map of Colorado showing location of lakes and reservoirs studied.

INTRODUCTION

Throughout history, man has been attracted to water, and large populations often settled at the water's edge. Lakes especially became an integral part of many communities, and most recently there has been an even greater demand for lakefront property. The increased demand for this resource has been met partly by the construction of manmade lakes or reservoirs, although natural lakes were originally sought as a means of transportation, source of food, and as a water supply. Lakes and reservoirs also are valued today for their esthetic qualities and for their recreational opportunities. However, their use for multiple purposes and often close proximity to urban areas have left many lakes and reservoirs susceptible to water-quality problems, such as fish kills, algal blooms, and sediment deposition. These problems are often products of the eutrophication process (lake enrichment, aging, and extinction), which can be accelerated by man's activities.

Increasing demands for water of suitable quality for various uses have focused attention on lake- and reservoir-basin planning, and a need has developed for a more thorough understanding of the properties and processes which govern lake and reservoir enrichment and the measures available to control it. Hydrologic studies of lakes and reservoirs have become more useful in assessing water quality and predicting aspects of the eutrophication process.

Colorado, even though it is a western semiarid State, has approximately 3,000 lakes and reservoirs. Most of the lakes and reservoirs are manmade, including small privately owned irrigation reservoirs, such as those on the Great Plains (Fenneman, 1931) in the eastern part of the State (fig. 1). Most of the larger reservoirs are mulitpurpose and are scattered throughout the State. Colorado's natural lakes were formed primarily as a result of glaciation and are restricted to the Rocky Mountains and the higher parts of the western Colorado Plateau. While reservoirs differ somewhat from natural lakes, both have a number of common characteristics and problems. Unless otherwise specified, the term "lake" will be used in this report to denote both natural and manmade lakes and reservoirs.

Because lakes are vital resources for aquatic life, they need to be surveyed and managed to insure that their usefulness and natural qualities are maintained. In Colorado, there is a deficiency of published information and water-quality data for lakes. Therefore, combined with increases in water use in Colorado, there is an increased need to evaluate the water quality and the present trophic status of the lakes.

Purpose and Scope

During the summer of 1973, a lake reconnaissance was begun by the U.S. Geological Survey, in cooperation with the Colorado Department of Natural Resources, Colorado Water Conservation Board, to determine current water-quality conditions and problems and to classify lakes by trophic state. During the summers of 1973, 1974, and 1975, physical and water-quality data were obtained for

56 lakes: 24 in 1973, 15 in 1974, and 19 in 1975. Cottonwood Lake in Mesa County was visited and sampled once each year. This report presents data on selected physical (inflows, drainage area, spillway or water-surface altitude, storage capacity, surface area, maximum depth, water temperature, and light transparency), chemical (dissolved oxygen, pH, specific conductance, major chemical constituents, nutrients, and trace elements), and biological (phytoplankton) characteristics of the lakes. Also included for each lake are information on ownership and principal uses and a map showing source of inflow and location of sampling sites.

Acknowledgments

The assistance of the Colorado Division of Wildlife; the U.S. Water and Power Resources Service (U.S. Bureau of Reclamation); the Colorado Department of Natural Resources, Division of Water Resources, Office of the State Engineer; the Denver Board of Water Commissioners; and the individual owners or regulating agencies of each lake for providing information on water use and allowing access to the lakes is gratefully acknowledged.

METHODS AND SIGNIFICANCE OF MEASURED VARIABLES

A depth sounder was used to locate, as closely as possible, the deepest point in the lake or reservoir; this point was used as the sampling location. Generally, the maximum depth in natural lakes was near the center of the lakes, and the maximum depth in reservoirs was near the dam. All lakes and reservoirs were sampled during late summer or early autumn when thermal stratification was expected to occur. At this time there is little mixing between the upper and lower water layers. This lack of mixing affects the concentrations of dissolved oxygen and chemical constituents in the deeper water, and hence, the biota.

Temperature and Thermal Stratification

One of the most significant properties of a lake is water temperature, because it is the major controlling factor for physical, chemical, and biological processes. For example, the solubility of dissolved oxygen is inversely related to temperature--that is, the warmer the water temperature, the less dissolved oxygen in the water. This fact has obvious biological implications because at warmer water temperatures, organisms have an increased metabolic rate but have less oxygen available for their physiological needs. Also, water-temperature measurements generally are used as a determinant or guide for the collection of other limnological data during sampling, because differences in chemical quality within a lake often are related to temperature differences.

The density of fresh water is primarily temperature dependent; the effect of dissolved and suspended materials on density is relatively less important. Fresh water is unique in that its maximum density occurs at approximately 4°C (Celsius).

At water temperatures either greater or less than 4°C, the density of water decreases. This property of water is a principal factor affecting thermal stratification of lakes. Thermal stratification is a natural condition whereby less dense, warm water overlies more dense, cold water in deeper lakes during the warmer months. Wind mixing of the water layers is hindered by the density differences. The isolation of the water layers, in conjunction with temperature and light-penetration differences (p. 7) allows various chemical and biochemical transformations to occur and results in differences in water quality of the water layers.

Most temperate-zone lakes undergo a regular pattern of seasonal mixing and stratification. Warming of the surface water during the summer produces thermal or density differences between the upper and lower water layers. Most of the radiant energy is absorbed in the water near the surface, and this water is heated more quickly and becomes less dense than water near the bottom. The lake becomes thermally stratified and is said to be in the summer-stagnation period (Hutchinson, 1957). The result is the formation of three water layers (see Taylor Park Reservoir, p. 69). The upper layer containing the warmest water is known as the *epilimnion* (fig. 2). The central layer, in which water temperature decreases rapidly with depth is known as the *metalimnion*. The lower layer containing the coldest water is known as the *hypolimnion*.

With the cool air temperatures of autumn, the surface-water temperature decreases. The surface water cools fastest, becomes more dense than the lower water, sinks, and is replaced by warmer, less dense water from below. This mixing of water layers continues until all the water has the same temperature and density. At this time the lake is in the autumn-circulation period, and even slight winds may mix the entire water mass and oxygenate the deeper water. Continued cooling during the winter may decrease the surface-water temperature until the lake surface is covered with ice. At this time the lake normally is stratified, with warmer (as much as 4°C) water on the bottom, and colder (0°C) water immediately below the ice. When the ice melts in the spring, the surface water warms until all the water again has the same temperature and density. This condition is known as the spring-circulation period. The result of each circulation period is that nutrients released into the hypolimnion from decaying organic matter in the bottom sediments become available for algal growth and production throughout the lake. Often this internal supply of nutrients produces algal blooms during the spring, summer, or autumn.

There are many variations in the thermal regime of lakes. For example, many shallow lakes thermally stratify during periods of calm but may be completely mixed at any time of the year by moderate winds. Other lakes are continuously mixed and thermal stratification does not occur.

Water temperatures were measured using a thermistor that is part of a unit which measures water temperature, dissolved oxygen, specific conductance, and pH simultaneously. Temperatures were measured to the nearest 0.1°C every 0.3 to 16 ft of depth, depending on the total depth of the lake, to establish the boundaries of the epilimnion, metalimnion, and hypolimnion.

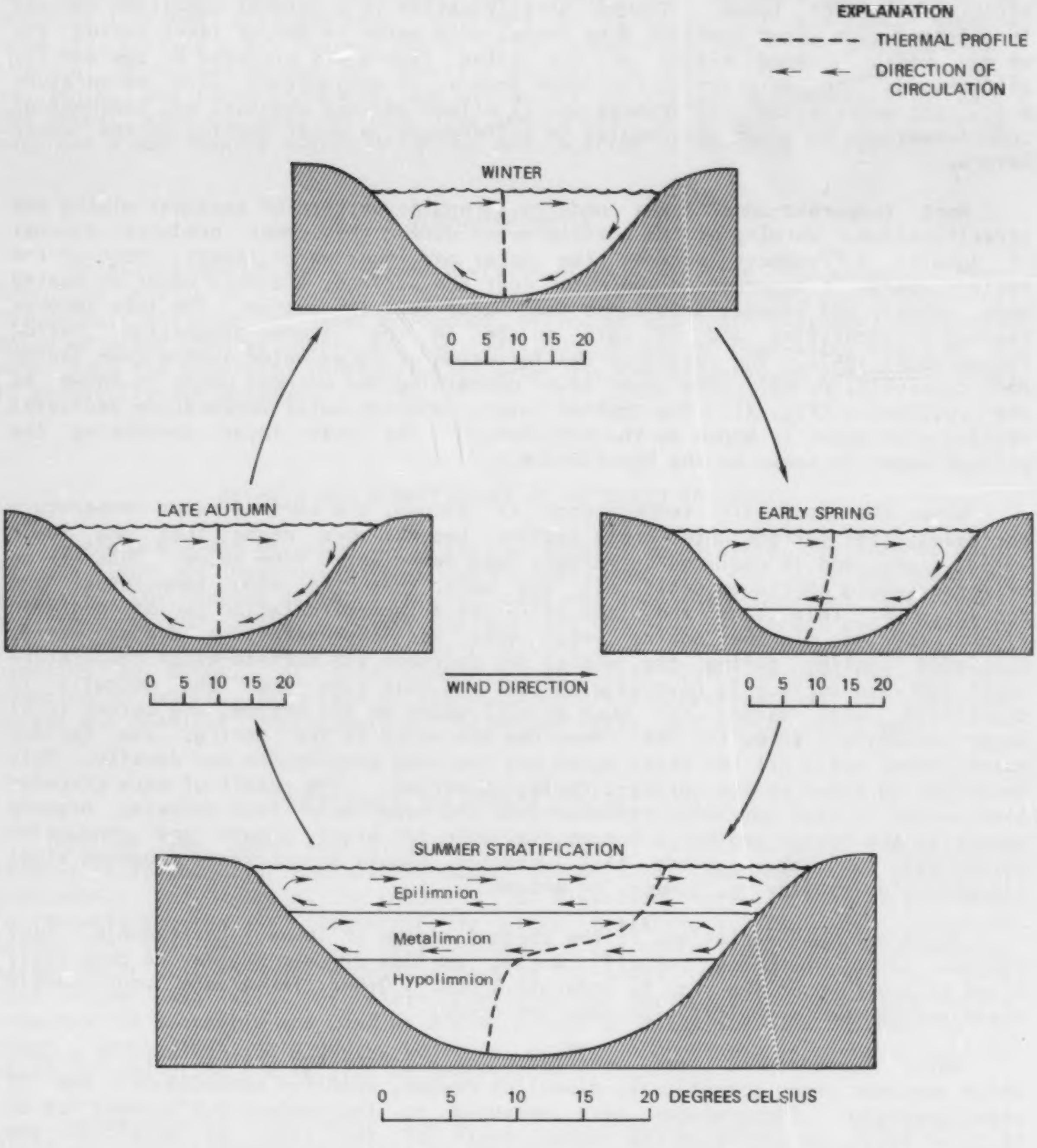

EXPLANATION
THERMAL PROFILE
DIRECTION OF CIRCULATION
WINTER
0 5 10 15 20
LATE AUTUMN
0 5 10 15 20
WIND DIRECTION
EARLY SPRING
0 5 10 15 20
SUMMER STRATIFICATION
Epilimnion
Metalimnion
Hypolimnion
0 5 10 15 20 DEGREES CELSIUS

Figure 2.--Seasonal thermal profiles of a temperate-zone lake.

Light Transparency

Light transparency is the ability of the water to transmit light. Light transparency controls photosynthetic activity that occurs only to depths where sufficient light is available. Interference resulting from materials that scatter or absorb light, such as algae, suspended sediment, or natural colored materials in solution, will limit the transmission of light to the uppermost layers of water.

Light transparency was measured in all lakes using a Secchi disk, a black and white, flat, circular disk about 8 in. in diameter. The measurement consisted of recording the depth at which the disk disappeared from view (Welch, 1948, p. 159). The depth of disappearance was marked on each lake profile.

At selected lakes during 1974 and 1975, light transparency also was measured using a submarine photometer that measures the percentage of light at depth relative to surface illumination. The depth at which the light intensity was 1 percent of the surface value approximately defines the compensation level--that is, the depth at which the rate of photosynthesis equaled the rate of respiration. A profile of light intensity is shown on selected figures in the "Results" section of the report (see Barr Lake, p. 21).

Dissolved Oxygen

The dissolved-oxygen concentration is another important property of water. The concentration of oxygen that dissolves in water is a function of temperature, atmospheric pressure, and the salinity of the water. Oxygen solubility is inversely related to temperature and salinity--that is, the warmer and more saline the water, the less the dissolved-oxygen concentration. In water at 0°C containing less than 600 mg/L (milligrams per liter) of dissolved chloride or an equivalent dissolved-solids concentration, the effect of salinity can be ignored (American Public Health Association and others, 1976, p. 446). The relation of oxygen solubility to atmospheric pressure is direct. Consequently, in higher altitude lakes, such as those in the mountains of Colorado, less oxygen will dissolve at a given temperature than will dissolve in lakes at lower altitudes, such as on the plains of eastern Colorado. The maximum theoretical dissolved-oxygen concentration for a given temperature, pressure, and salinity is the saturation concentration, but supersaturated or undersaturated conditions may exist.

The dissolved-oxygen concentration also is affected by the physical interaction of the water with the atmosphere (aeration from wave action) and by biological activity. During photosynthesis, phytoplankton and other green plants in the water use carbon dioxide from the water, synthesize carbohydrates, and release oxygen. The released oxygen dissolves and may increase the total oxygen to a concentration greater than the saturation or equilibrium concentration. The water is then supersaturated with oxygen.

The associated process, whereby oxygen is used by organisms, is called respiration. Depletion or undersaturated-oxygen conditions occur when aerobic bacteria or respiring plants and animals use the dissolved oxygen at a faster rate than it can be replaced by physical or biological activities.

When thermal stratification occurs in a lake, a density barrier is formed that prevents transfer of dissolved oxygen from the surface water to the bottom water. The bottom water may then lose, by natural respiration of plants and animals, all the oxygen gained during the last mixing period. A dissolved oxygen minimum can occur in the metalimnion (see Blue Mesa Reservoir, p. 65) due to high rates of decomposition by bacteria that sometimes accumulate in this layer. When large quantities of decomposable organic wastes are introduced into lakes, oxygen depletion can occur throughout the lake, thus causing the death of aquatic organisms--primarily those with the greatest oxygen requirements, such as fish. Different types of fish require varying concentrations of dissolved oxygen to survive. "Cold-water" fish, such as trout, require larger concentrations of dissolved oxygen (more than 5 mg/L) than do "warm-water" fish, such as carp and catfish (more than 4 mg/L) (U.S. Environmental Protection Agency, 1976b).

A dissolved-oxygen maximum sometimes occurs in the metalimnion (see Lake San Cristobal, p. 73) due to locally increased populations of phytoplankton that accumulate in this layer of increased density. Increased concentrations of dissolved oxygen in the bottom of some lakes (see Ralston Reservoir, p. 85) probably result from inflow of stream water containing relatively large dissolved-oxygen concentrations during normal reservoir operations. Dissolved oxygen was measured to the nearest 0.1 mg/L, using a polarographic probe that is part of the multiparameter unit referred to on p. 5.

Specific Conductance

Specific conductance is a measure of the ability of water to conduct an electric current. In natural waters, specific conductance results primarily from dissolved ions and, thus, provides an estimate of the concentration of dissolved solids. The dissolved-solids concentration, in milligrams per liter, of water in lakes in Colorado can be approximated by multiplying the specific conductance, in micromhos per centimeter at 25°C, by 0.75. Frequent measurement of the individual major constituents usually is not necessary, as changes in dissolved-solids concentrations can be detected by measuring the specific conductance.

Differences in specific conductance throughout the water column are sometimes used to distinguish water layers in lakes. Although only small vertical differences usually occur in specific conductance, a larger specific conductance sometimes will be measured near the bottom of a lake (see Rifle Gap Reservoir, p. 53), due to dissolution and decomposition within the bottom sediments and from settling and dissolution of suspended particles. Similar increases in specific conductance can be restricted to the metalimnion (see Crawford Reservoir, p. 43); these increases may result from relatively large rates of decomposition associated with bacterial populations.

Water with dissolved-solids concentrations less than 500 mg/L (specific-conductance values less than about 670 micromhos for Colorado lakes) is suitable for use as a drinking-water supply (U.S. Environmental Protection Agency, 1976a). Water with dissolved-solids concentrations ranging from about 500 to 1,000 mg/L (specific conductances ranging between 670 and 1,350 micromhos for Colorado lakes) is regarded as marginal for use as a drinking-water supply, and may have detrimental effects on sensitive crops if used for irrigation (U.S. Environmental Protection Agency, 1976a). Specific conductance was measured at various depths using an electrical resistance probe that is part of the multiparameter unit.

pH

In most fresh water, pH, which is a measure of the hydrogen-ion (H^+) activity, can be considered equal to the hydrogen-ion concentration. Values on the pH scale range from 0 to 14, and determine whether a solution is acidic or basic (alkaline). A pH of 7 refers to a neutral solution and means that the solution contains 10^{-7} moles per liter of hydrogen ions. Solutions with pH ranging from 0 to 7 are acidic, and solutions with pH ranging from 7 to 14 are basic. The solubility of many chemical constituents and the biological activity of many organisms in water are pH dependent; thus, pH is an important factor in controlling the concentrations of chemical constituents and populations of organisms in the water. The pH also may affect the suitability of water for various uses. A range of pH between 6.5 and 9.0 is recommended for most fish and for water used as a source of public-water supplies (U.S. Environmental Protection Agency, 1976b).

The pH of water in lakes may be altered by photosynthesis and respiration, as well as by inflowing water from surface- and ground-water sources. The use of carbon dioxide during photosynthesis increases the pH of the water, whereas the release of carbon dioxide during respiration decreases the pH. Therefore, it is common that pH values are greatest near the surface, where photosynthesis occurs and least near the bottom, where respiration dominates (see Cottonwood Lake No. 1, p. 113). The pH sometimes decreases to a minimum in the metalimnion (see Blue Mesa Reservoir, p. 65), where settling materials are decomposed by large concentrations of bacteria. Commonly, the pH profile parallels the dissolved-oxygen profile. Values of pH were measured at various depths using a glass-membrane probe that is part of the multiparameter unit.

Chemical and Biological Constituents

Chemical constituents in water consist of dissolved and suspended minerals, such as calcium and sulfate, gases, such as oxygen and carbon dioxide, and organic compounds, such as herbicides and pesticides. The presence and concentrations of the various chemical constituents determine the chemical quality characteristics of the water in lakes. The chemical constituents discussed in this report include major chemical constituents, trace constituents, and major plant nutrients.

Lakes also contain a variety of biological organisms including bacteria, plankton, higher plants, insects, and fish. Plant and animal life are affected by changes in water quality. Lakes are relatively closed systems in regard to factors from outside their watershed, and interacting organisms remain in balance only under suitable water-quality conditions. Measurements of the populations of phytoplankton (algae) were used as indicators of biologic conditions in the lakes.

Water samples for determination of chemical constituents and phytoplankton densities were collected from the surface and for chemical constituents near the bottom of each lake, using a standard, Kemmerer-type polyethylene water-sampling bottle. General procedures used for collection, preservation and analysis are found in Skougstad and others (1979) and Greeson and others (1977). The samples were analyzed at the U.S. Geological Survey laboratories in Salt Lake City, Utah, and Doraville, Ga.

Major Chemical Constituents

The major chemical constituents comprise most of the dissolved solids in water. The concentrations of major chemical constituents usually are expressed in milligrams per liter. In fresh water, the principal cations are calcium, magnesium, sodium, and potassium. These cations are associated with the principal anions bicarbonate, carbonate, sulfate, chloride, and fluoride. These cations and anions are all essential plant nutrients; but unlike nitrogen and phosphorus, they usually occur in sufficient concentrations so as not to become limiting to plant growth.

Under natural conditions, the concentrations of the major chemical constituents are related primarily to the minerals in rocks that are found in the drainage basin upstream from the lake. However, man's waste materials may add significant amounts of the constituents to water. An analysis of major chemical constituents is of value in assessing pollution and eutrophication (enrichment) problems in lakes. In addition, the major chemical constituents may control the maximum concentrations of dissolved phosphorus and trace constituents. The carbon dioxide-bicarbonate-carbonate system is a principal factor controlling the buffering of pH in the lakes. However, during short periods, and in the absence of other factors, the concentrations of the major chemical constituents change very little. Frequent measurement of the individual major constituents usually is not necessary, and concentration changes in dissolved solids (summation of the major dissolved constituents) can be detected by measuring the specific conductance of the water.

Nonuniform vertical mixing of chemical constituents can occur because of differences in wind velocity and water temperature, the shape of the lake and its basin, biological activity, and many other factors. Therefore, water samples for major chemical constituents collected at several depths in a lake and at several areally separated sites will more accurately define the distribution of major chemical constituents than will a single point sample. However, the epilimnion and hypolimnion of a lake usually are well mixed, and one sample taken from each in the summer is commonly sufficient for a general characterization of the concentrations of the major chemical constituents during stratification.

Trace Constituents

Trace constituents occur in relatively small concentrations in water, generally less than 1 mg/L. Trace-constituent concentrations usually are expressed in micrograms per liter (µg/L), which is one thousandth of 1 mg/L. Many trace constituents are essential plant and animal nutrients. However, some trace constituents may be toxic to plants and animals even in relatively small concentrations. For example, a concentration of total iron greater than 1,000 µg/L exceeds the recommended criterion for aquatic life (U.S. Environmental Protection Agency, 1976b).

Trace constituents commonly are transported with sediment and are rapidly removed from the water when the sediment settles to the lake bottom. Reducing conditions commonly exist at depth in the bottom sediments where the water filling the void spaces between the sediment particles contains little or no dissolved oxygen. These conditons commonly dissolve and mobilize the trace constituents, which then migrate upward toward the lake bottom. As the trace constituents approach or reach the lake bottom, they are oxidized by the dissolved oxygen contained in the lake water and precipitate on the upper sediment particles. These conditions eventually may cause depletion of the dissolved oxygen in the hypolimnion. The resulting reducing conditions can again dissolve and mobilize the trace constituents. Should the oxidized zone of the sediments become disrupted by dredging, currents, or oxygen-depleted conditions in the water, large amounts of trace constituents can be released to the water in a short period of time. In lakes having an oxygen-depleted hypolimnion, trace constituents may dissolve readily, causing large concentrations in the hypolimnion compared to the epilimnion, where most algal growth occurs. During periods of rapid mixing of the hypolimnion with the epilimnion, such as during the spring and fall, trace constituents from the hypolimnion are brought near the lake surface. At these times the trace constituents may cause toxic effects on the biota (Delfino, 1979).

The trace constituents that were determined in this study included dissolved arsenic, cadmium, chromium, copper, iron, lead, manganese, mercury, molybdenum, nickel, selenium, silver, and zinc. However, for most analyses, only iron and manganese were determined.

Major Plant Nutrients

A nutrient is any substance necessary for growth, repair of tissue, or energy needs of an organism (Fruh, 1967). Nitrogen and phosphorus (in their several forms) are considered to be the major plant nutrients because their concentrations in water are most likely to be exhausted by phytoplankton, thus limiting further growth. The concentrations of these nutrients are altered readily by biological activity, and even short-term storage of water samples before analysis may result in significant changes in concentration and form of the nutrients (Skougstad and others, 1979).

For many years, scientists have categorized lakes in terms of nutrient concentrations (Lee and Fruh, 1966; Vollenweider, 1970, 1976; and Rast and Lee, 1978). A lake with water containing relatively small nutrient concentrations is considered oligotrophic. Most newly filled reservoirs are in this category. A lake with water containing relatively large nutrient concentrations is considered eutrophic. As a result of increased nutrient concentrations, the productivity and the biomass (plants and animals) of a lake increase. The process of lake eutrophication commonly is subdivided into natural and cultural or artificial eutrophication. Nutrients naturally enter a lake from the atmosphere (principally in rainfall), ground-water inflow, streamflow, and overland runoff. The activities of man, such as application of agricultural fertilizers and discharge of treated municipal-sewage effluent in the drainage basin can result in an increased nutrient load to a lake; this, in turn, may accelerate the eutrophication process.

Nutrient recycling within a lake, particularly of phosphorus from bottom sediments, also significantly increases the productivity and eutrophication of lakes. Chemical reactions in bottom sediments tend to release phosphorus to the overlying water. This phosphorus remains in solution in oxygen-depleted hypolimnia and is mixed throughout the lake during periods of circulation in a manner similar to that discussed in the section "Trace Constituents," p. 11.

Nitrogen and phosphorus commonly are the nutrients that limit the fertility of a lake. That is, the productivity in a lake will be limited by the nutrient or element present in the least amount compared to plant and animal needs. Nitrogen has been determined to be the limiting factor for algal growth in Grand Lake (p. 55) and phosphorus and nitrogen the limiting factors in Shadow Mountain Lake (p. 59) and Lake Granby (p. 57) (U.S. Environmental Protection Agency, 1975). Maximum allowable point-source contributions of phosphorus have been specified for Dillon Reservoir (p. 135), as phosphorus has been determined to be the limiting factor for algal growth; phosphorus also is the limiting factor in Green Mountain Reservoir (p. 137) (U.S. Environmental Protection Agency, 1974, 1977a).

Although nitrogen and phosphorus are key limiting nutritive elements (Lee and others, 1978), other compounds and elements can limit algal growth. For example, although nitrogen and phosphorus may be the primary control for total algal biomass in most lakes, trace elements and even vitamins and organic compounds may be the control for the types of algae present (Patrick, 1978). Also, silica (usually expressed as SiO_2) is needed by diatoms (a group of algae), as their cell wall is composed of this constituent. In water containing relatively small silica concentrations, diatom growth can be limited; in fact, silica use by diatoms has been found to result in growth-limiting concentrations (Wetzel, 1975, p. 285). Finally, a literature review by Greeson (1971) indicated that there are at least 21 elements, in some chemical combination, essential for the growth of phytoplankton. However, most of these elements do not become limiting in water.

Phytoplankton

The assemblage of organisms that inhabit the water of lakes and rivers, and that are suspended and drift with the currents are called plankton. The phytoplankton, or plant part of the plankton, commonly known as algae, can reproduce prolifically in nutrient-rich aquatic environments. Unattached, visible, and sometimes extensive accumulations of algae at or near the surface of the water are called algal blooms. Algal blooms with concentrations exceeding 1,000 cells/mL (cells per milliliter) of water can ruin the recreational and esthetic value of water (Lee, 1970).

Excessive concentrations of algae can cause taste and odor problems, clog intake screens in water-treatment plants, produce slime conditons, and be toxic to animals (Palmer, 1977). Because of over-production, great numbers of algae die as nutrients needed for growth and reproduction are used. As a result of algal decomposition after death, dissolved oxygen may become depleted, causing fish kills.

The most common groups of planktonic algae are the diatoms, green algae, and blue-green algae. Usually, it is the blue-green algae that become overabundant during the warmer months and cause problems in lakes and reservoirs. In this report, the total number of phytoplankton cells per milliliter of water is reported.

Trophic Status

The trophic status (degree of nutrient enrichment) of a lake can be determined using a number of criteria. Although several means of assigning the terms oligotrophic (small productivity), mesotrophic (medium productivity), or eutrophic (large productivity) to lakes have been proposed (Hutchinson, 1957; Fruh, 1967; and Vollenweider, 1970, 1976), no single criterion for defining trophic status is appropriate. For this investigation, concentrations of dissolved oxygen, nitrogen, phosphorus, and phytoplankton were used as indicators of a particular lake's trophic condition. Because changes between oligotrophic and eutrophic conditions do not occur at sharply defined places, a lake or reservoir may be considered oligotrophic by one criterion and eutrophic by another.

In evaluating the trophic status of the lakes and reservoirs, the criteria listed below were used. Following each criterion is the reference citation to the report upon which the criterion was based.

Dissolved oxygen in the hypolimnion: Concentrations equal to or greater than 5 mg/L=oligotrophic; concentrations less than 5 mg/L=eutrophic (U.S. Environmental Protection Agency, 1976b).

Dissolved inorganic nitrogen (ammonia, nitrite, nitrate): Concentrations equal to or less than 0.3 mg/L=oligotrophic; concentrations greater than 0.3 mg/L=eutrophic (Sawyer, 1947).

Dissolved phosphorus: Concentrations equal to or less than 0.01 mg/L=oligotrophic; concentrations greater than 0.01 mg/L=eutrophic (Sawyer, 1947).

Phytoplankton: Concentrations equal to or less than 1,000 cells/mL=oligotrophic; concentrations greater than 1,000 cells/mL=eutrophic (Lee, 1970). Results of the evaluation using the above criteria are summarized in table 1.

A numerical trophic-classification scheme developed by Carlson (1977), also was used to more quantitatively define the trophic state and to make comparisons between lakes. This trophic state index (TSI) categorizes most lakes using a scale of 0 to approximately 100 (0 indicating almost no biomass) and is listed in the last column of table 1. The index number can be calculated from Secchi-disk transparency, or from chlorophyll-*a* or total-phosphorus concentrations. The ideal situation for calculating a trophic-state index is to use all of the above indicators. This would serve as a check on sampling techniques and analysis methods, and on assumptions as to relationships among various components of the lake ecosystem (Carlson, 1977). For example, all indicators should have the same value when transformed to the trophic scale. Actually, the best indicator of trophic status may vary from lake to lake and also seasonally, so the best indicator (Secchi-disk transparency, chlorophyll-*a* concentration, or total-phosphorus concentration) should be chosen based on available knowledge of the lake ecosystem (Carlson, 1977).

For the lakes in this report, Secchi-disk transparency was the only indicator collected, so it was used to calculate the index, using the equation:

$$TSI(SD)=10\left(6-\frac{lnSD}{ln2}\right),$$

where $lnSD$=the natural logarithm (logarithm to the base 2) of Secchi-disk transparency, in meters.

It should be emphasized that the value obtained using this equation is only an index of the relative trophic status of a lake and does not define the actual or absolute trophic status. In addition, Secchi-disk transparency might give erroneous values in lakes containing relatively large amounts of nonalgal particulate matter, darkly colored water, or extremely clear water (Carlson, 1977). Also it must be emphasized that the value of $TSI(SD)$ in most cases is based on only one measurement of Secchi-disk transparency. Therefore, the index shown in table 1 must be interpreted in conjunction with the other water-quality information reported.

Table 1.--*Summary of trophic status of lakes and reservoirs in Colorado*

[O=oligotrophic; M=mesotrophic; E=eutrophic]

Lake or reservoir	Dissolved oxygen in hypolimnion	Dissolved inorganic nitrogen	Dissolved phosphorus	Phytoplankton	Trophic status[1]	Trophic-state index [TSI(SD)]
Anderson Reservoir No. 1	O	O	O	E	O	47
Antero Reservoir	O	O	E	O	O	54
Barr Lake	O	E	E	E	E	63
Big Beaver Reservoir	E	O	E	E	E	42
Big Creek Lake (Lower)	E	O	E	O	M	41
Blue Mesa Reservoir	O	O	E	O	O	41
Bonham Reservoir	O	O	E	O	O	41
Carter Lake	O	O	O	O	O	42
Cheesman Lake	O	O	E	E	M	35
Continental Reservoir	O	O	E	E	M	67
Cottonwood Lake No. 1	E	O	E	E	E	(2)
Crawford Reservoir	E	O	E	O	M	42
East Delaney Lake	O	O	O	E	O	54
North Delaney Lake	O	O	O	E	O	39
South Delaney Lake	O	O	E	E	M	40
De Weese Reservoir	E	O	E	E	E	65
Dillon Reservoir	O	O	E	O	O	35
Electra Lake	O	E	E	E	E	36
Elevenmile Canyon Reservoir	E	O	E	O	M	42
Grand Mesa Reservoir	E	O	E	E	E	54
Lake Granby	O	O	E	E	M	44
Grand Lake	O	O	E	E	M	47
Green Mountain Reservoir	O	E	E	E	E	50
Gross Reservoir	O	O	E	E	M	38
Horsetooth Reservoir	O	O	E	O	O	56
Lake John	E	O	O	O	O	47
Juniata Reservoir	-	O	O	O	O	--
La Jara Reservoir	O	E	E	E	E	83
Lemon Reservoir	E	O	O	E	M	45
Marston Lake	O	-	-	-	-	36
Lake Meredith	O	O	E	E	M	80
Morrow Point Reservoir	O	O	E	E	M	43
Navajo Reservoir	O	O	E	E	M	67
Neenoshe Reservoir	O	O	E	E	M	63
North Sterling Reservoir	E	E	E	E	E	70

Table 1.--*Summary of trophic status of lakes and reservoirs in Colorado*--Continued

Lake or reservoir	Dissolved oxygen in hypolimnion	Dissolved inorganic nitrogen	Dissolved phosphorus	Phytoplankton	Trophic status[1]	Trophic-state index [TSI(SD)]
Paonia Reservoir--------------	0	0	E	E	M	50
Platoro Reservoir-------------	0	0	0	0	0	45
Purdy Mesa Reservoir----------	-	0	E	0	-	--
Ralston Reservoir-------------	0	0	E	0	0	48
Rifle Gap Reservoir-----------	E	E	0	0	M	53
Ruedi Reservoir---------------	0	0	E	0	0	41
Lake San Cristobal------------	0	0	E	0	0	37
San Luis Lake-----------------	0	0	E	E	M	53
Shadow Mountain Lake----------	0	0	E	0	0	50
Standley Lake-----------------	E	E	E	0	E	45
Steamboat Lake----------------	E	E	E	E	E	54
Taylor Park Reservoir---------	0	0	0	E	0	40
Terrace Reservoir-------------	0	0	E	0	0	62
Terry Lake--------------------	E	0	E	E	E	70
Turquoise Lake----------------	0	0	0	0	0	47
Twin Lakes Reservoir:						
Western basin---------------	0	0	E	0	0	39
Eastern basin---------------	0	0	E	0	0	38
Two Buttes Reservoir----------	0	0	E	E	M	67
Vallecito Reservoir-----------	E	0	0	E	M	40
Vega Reservoir----------------	E	0	E	E	E	47
Williams Fork Reservoir-------	E	0	E	E	E	54
Willow Creek Reservoir--------	E	0	E	E	E	38

[1] Trophic status: Three or four oligotrophic criteria=oligotrophic; two oligotrophic and two eutrophic critera=mesotrophic; three or four eutrophic criteria=eutrophic.

[2] See pages 113-117.

RESULTS

RESULTS

Results of the investigation consist of: The location of the lake or reservoir and sampling site; a description of the physical features of the lake or reservoir including the year completed, owner, and principal uses; a graph showing vertical distribution of water temperature, specific conductance, dissolved oxygen, pH, and, when available, light transparency; and water-quality analyses. An explanation of the terms used to describe selected information follows:

Name and number on figure 1: The lakes and reservoirs are presented in alphabetical order by county. The lake and reservoir names are those obtained from U.S. Geological Survey topographic maps. The number following the name corresponds to the number shown on figure 1.

County: The name of the county shown is that in which the lake or reservoir is located. Lakes or reservoirs located in more than one county are listed by the county in which the greater part of the lake or reservoir occurs.

U.S. Geological Survey station-identification number: If the lake or reservoir was initially sampled during this investigation, a 15-digit number based on the latitude and longitude location (for example, 384250108022200) was assigned to the lake at the outflow stream. If there is no outflow, it is the southernmost point of the lake. In some cases an 8-digit station number previously assigned to the lake or reservoir (for example, 09050600) is used.

Location: The lake or reservoir is located both by latitude and longitude and by section, township, and range. Also included is the name(s) of the U.S. Geological Survey 7½-minute topographic map(s) on which the lake or reservoir is located. The actual sampling-site location is indicated with a triangle on the individual maps (see p. 20).

Principal inflow: The principal inflow is the stream or diversion facility that normally provides the largest surface inflow to the lake or reservoir as determined from U.S. Geological Survey topographic maps. Those lakes or reservoirs that have no source of principal inflow are designated as being "offstream," and no principal inflow is reported.

Year completed: For reservoirs, this is the year that dam construction was completed and water storage began. In some instances, the date may be the year that reconstruction was completed.

Drainage area: Drainage area includes both the land area that contributes inflow to the lake or reservoir and the surface area of the lake or reservoir. A drainage area is not reported for those lakes and reservoirs that are "offstream" (do not have a principal inflow) or that have significant inflows resulting from irrigation outside the drainage area. Drainage areas were determined from published reports (U.S. Geological Survey, 1979; Martin and Hanson, 1966); from unpublished data obtained from the Colorado Department of Natural Resources, Division of Water Resources, Office of the State Engineer; from data obtained from owners or regulating agencies; or from U.S. Geological Survey topographic maps.

Water-surface or spillway altitude: These altitudes correspond either to the water surface for natural lakes or to the altitude of the spillway for reservoirs, in feet above mean sea level, as determined from U.S. Geological Survey topographic maps. The water-surface altitudes are approximate, as the water-surface altitudes of many lakes vary with fluctuations in water volume.

Storage capacity: This is the capacity of the lake or reservoir at the maximum water-surface or spillway altitude. Reservoir dead storage was included, if available. Storage capacities were determined from published reports (U.S. Geological Survey, 1979; Martin and Hanson, 1966; U.S. Bureau of Reclamation, 1978); from unpublished data obtained from the Colorado Department of Natural Resources, Division of Water Resources, Office of the State Engineer; or from data obtained from owners or regulating agencies.

Surface area: This is the maximum surface area at the maximum water-surface or spillway altitude. Surface areas were determined from Martin and Hanson (1966); from unpublished data obtained from the Colorado Department of Natural Resources, Division of Water Resources, Office of the State Engineer; from data obtained from owners or regulating agencies; or from U.S. Geological Survey topographic maps.

Maximum depth: This is the maximum vertical distance between the maximum water-surface or spillway altitude and the bottom of the lake or reservoir. Maximum depths were determined from bathymetric maps provided by owners or regulating agencies or were approximated from data collected during this investigation.

Owner or regulating agency: This is the owner of natural lakes or the agency operating the reservoir.

Principal uses: These are the principal uses as determined from data provided by owners and regulating agencies or from on-site inspection.

Remarks: Pertinent information regarding potential or existing water-quality problems or references to trophic condition of the lakes (see Trophic Status section, p. 13) are listed.

Name and number on figure 1: Barr Lake--1

County: Adams

U.S. Geological Survey station-identification number: 395730104451700

Location: Latitude 39°57'30", longitude 104°45'17"; sec. 22, T. 1 S., R. 68 W.; about 3 mi southeast of Brighton. (Brighton and Mile High Lakes 7½-minute topographic quadrangles)

Principal inflow: Denver-Hudson Canal

Year completed: 1893

Drainage area: Off-stream reservoir

Water-surface or spillway altitude: 5,906 ft

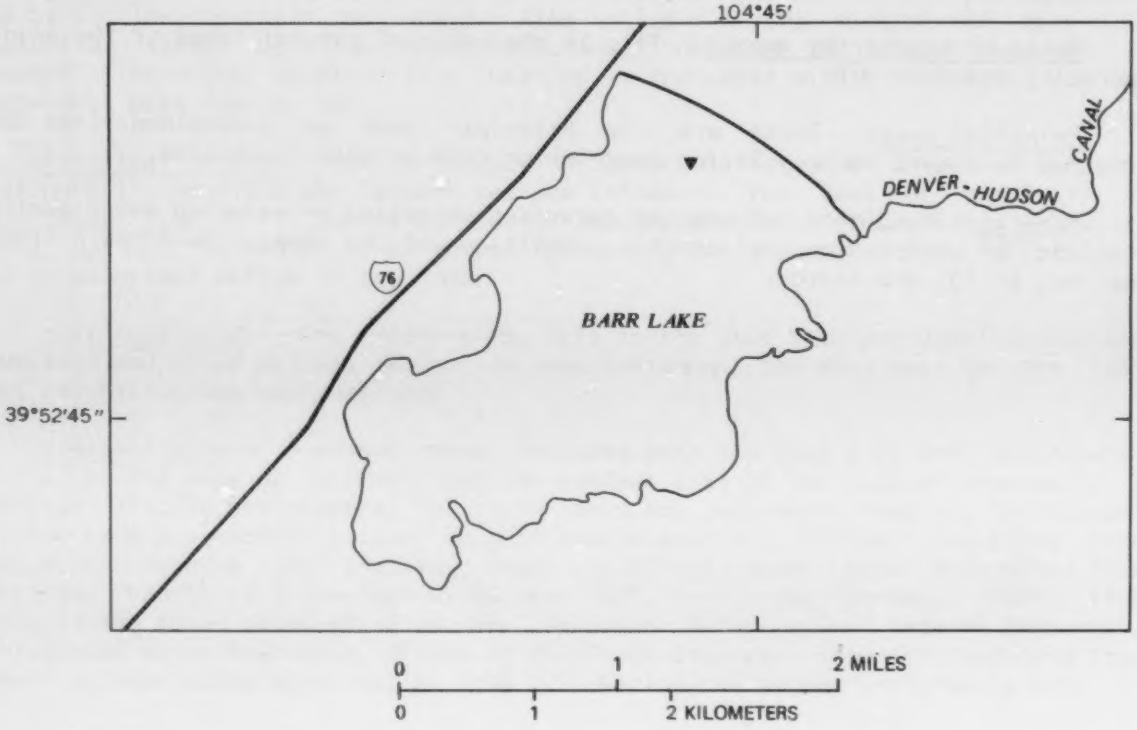
Storage capacity: 32,150 acre-ft

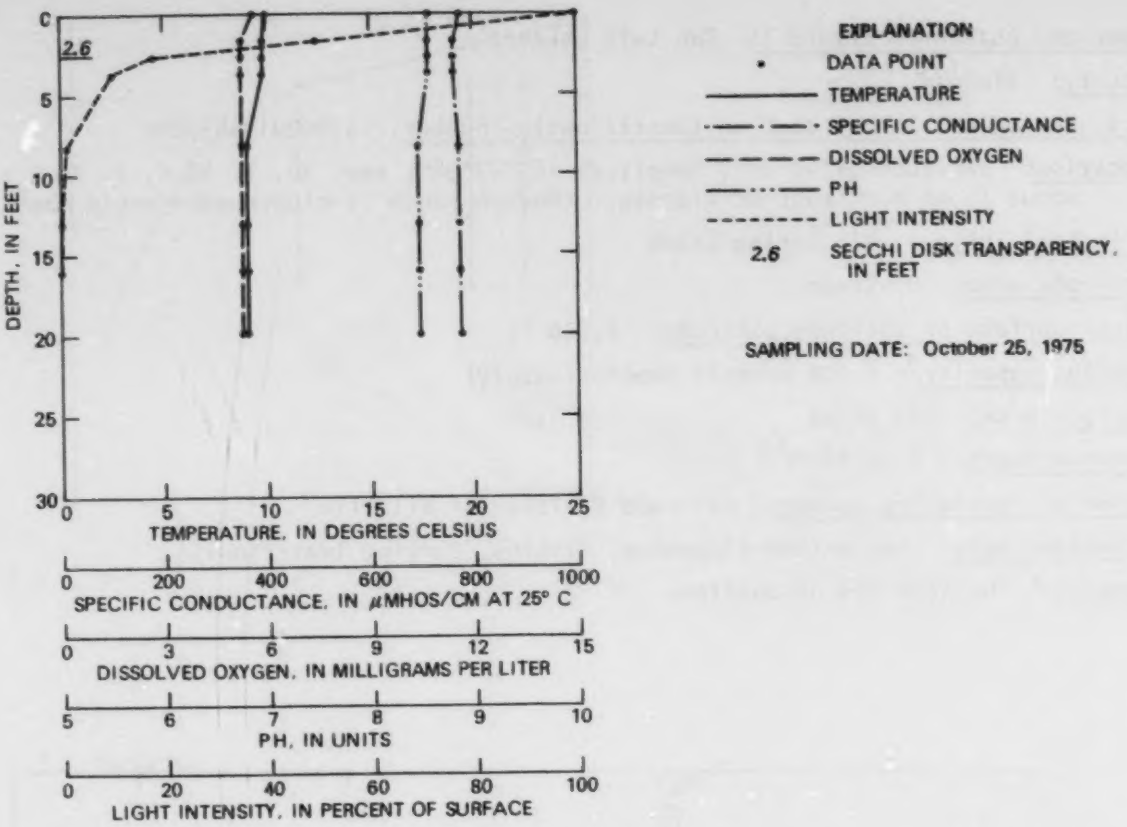
Surface area: 1,760 acres

Maximum depth: 20 ft (approximately)

Owner or regulating agency: Farmers Reservoir and Irrigation Company

Principal uses: Irrigation. No boating or swimming permitted.





SAMPLING DATE: October 25, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT												
25...	1.6	230	72	13	85	7.2	226	185	140	67	.9	9.8
25...	20	210	64	13	79	7.2	219	180	130	67	1.0	9.9

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
OCT												
25...	515	.14	3.7	1.0	4.7	1.1	1.0	.09	.01	10	--	--
25...	488	.13	3.7	1.1	4.8	1.1	1.0	.08	.02	9.4	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
OCT												
25...	--	--	40	--	50	--	--	--	--	--	--	75000
25...	--	--	20	--	60	--	--	--	--	--	--	--

Name and number on figure 1: San Luis Lake--2

County: Alamosa

U.S. Geological Survey station-identification number: 374000105433800

Location: Latitude 37°40'00", longitude 105°43'38"; sec. 30, T. 40 N, R. 11 E.; about 15 mi northeast of Alamosa. (Medano Ranch 7½-minute quadrangle map)

Principal inflow: Big Spring Creek

Drainage area: Ofstream

Water-surface or spillway altitude: 7,500 ft

Storage capacity: 5,000 acre-ft (approximately)

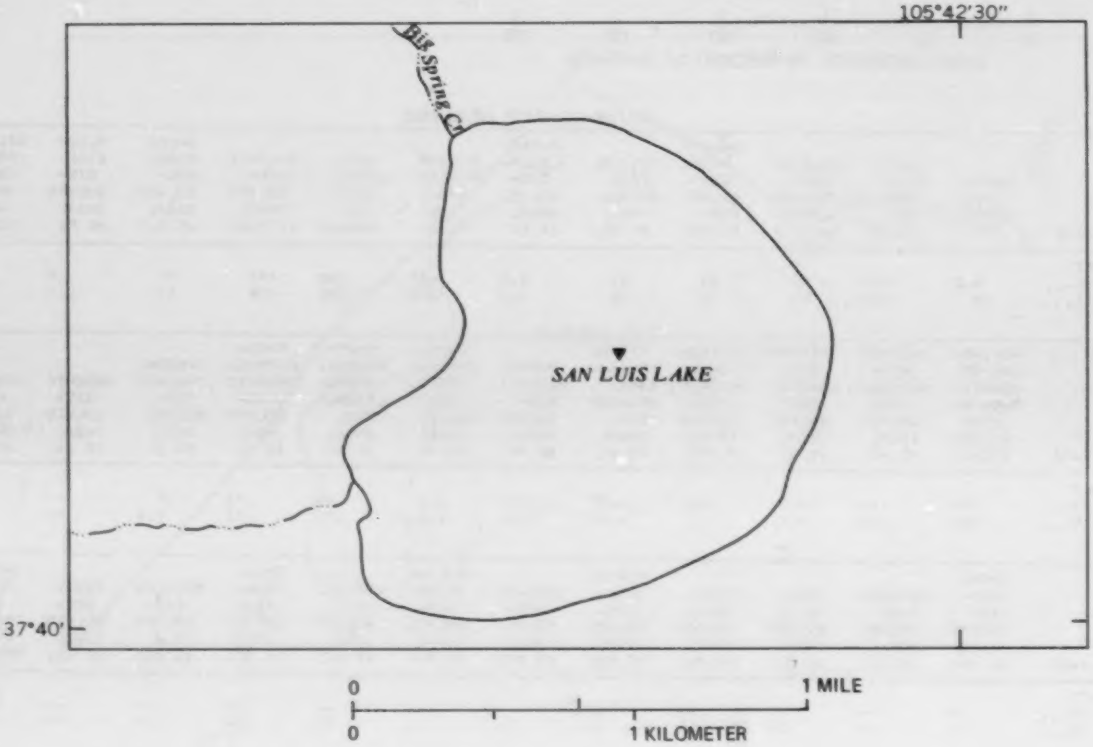
Surface area: 530 acres

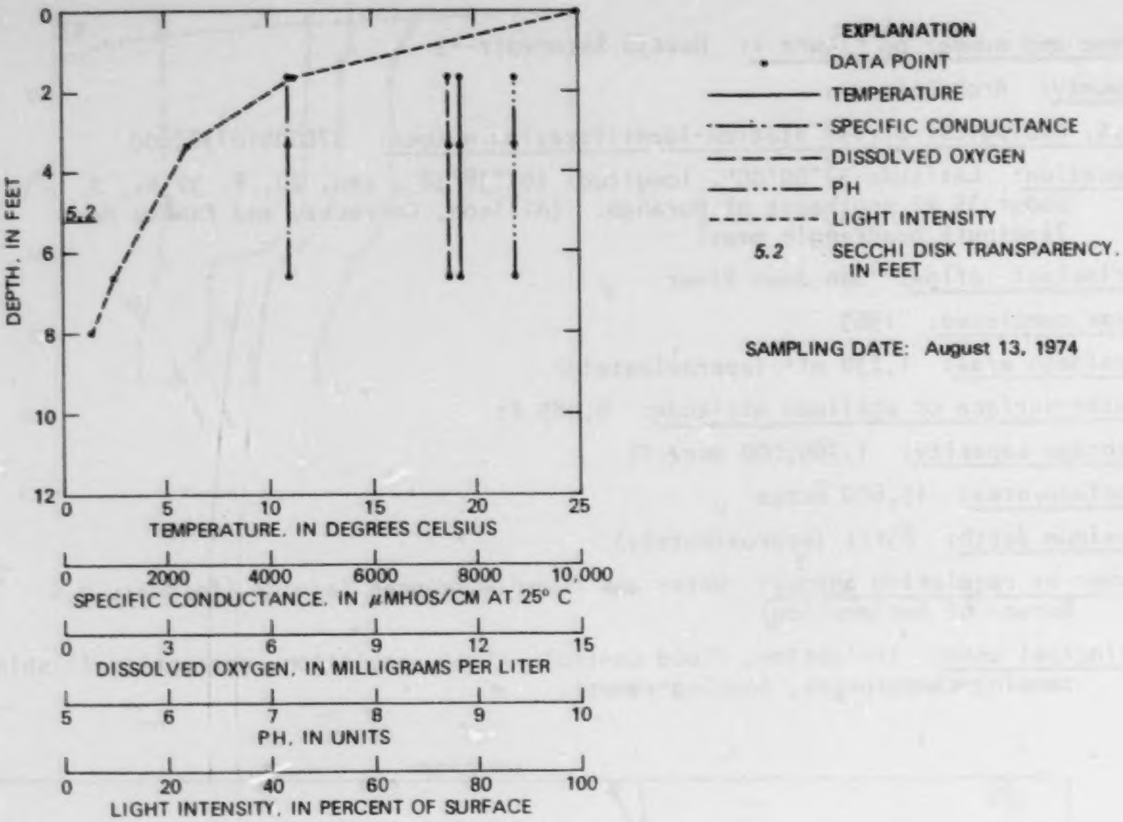
Maximum depth: 8 to 10 ft

Owner or regulating agency: Colorado Division of Wildlife

Principal uses: Recreation [(boating, fishing, hunting (waterfowl)]

Remarks: The lake has no outflow.





SAMPLING DATE: August 13, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 13...	1.6	67	11	9.7	950	210	893	1240	550	420	2.9	16
13...	6.6	63	9.1	9.8	960	210	909	1240	590	400	2.9	16

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 13...	2920	.01	.09	4.2	4.3	.25	.17	.08	.00	65	--	--
13...	2940	.01	.05	3.7	3.7	.24	.17	.08	.00	6.0	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 13...	--	--	50	--	0	--	--	--	--	--	--	18000
13...	--	--	70	--	10	--	--	--	--	--	--	--

Name and number on figure 1: Navajo Reservoir--3

County: Archuleta

U.S. Geological Survey station-identification number: 370000107383800

Location: Latitude 37°00'00", longitude 107°38'38"; sec. 20, T. 32 N., R. 5 W.; about 35 mi southeast of Durango. (Allison, Carracas, and Bancos Mesa 7½-minute quadrangle maps)

Principal inflow: San Juan River

Year completed: 1963

Drainage area: 1,230 mi^2 (approximately)

Water-surface or spillway altitude: 6,085 ft

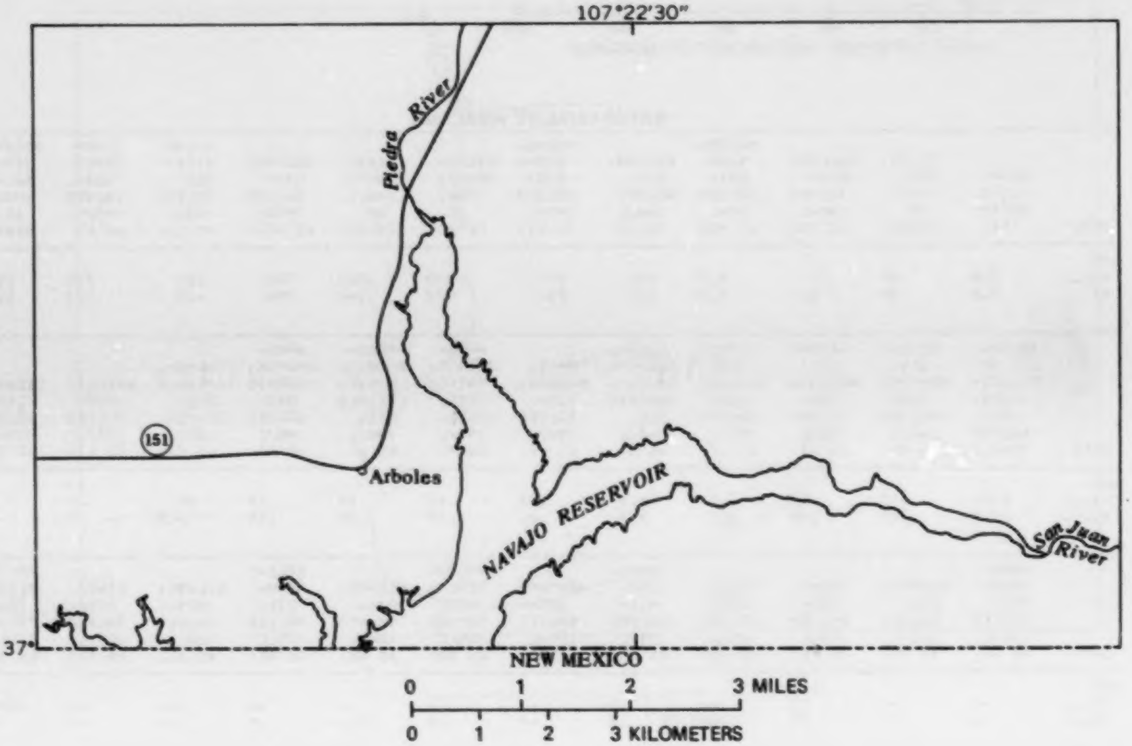
Storage capacity: 1,709,000 acre-ft

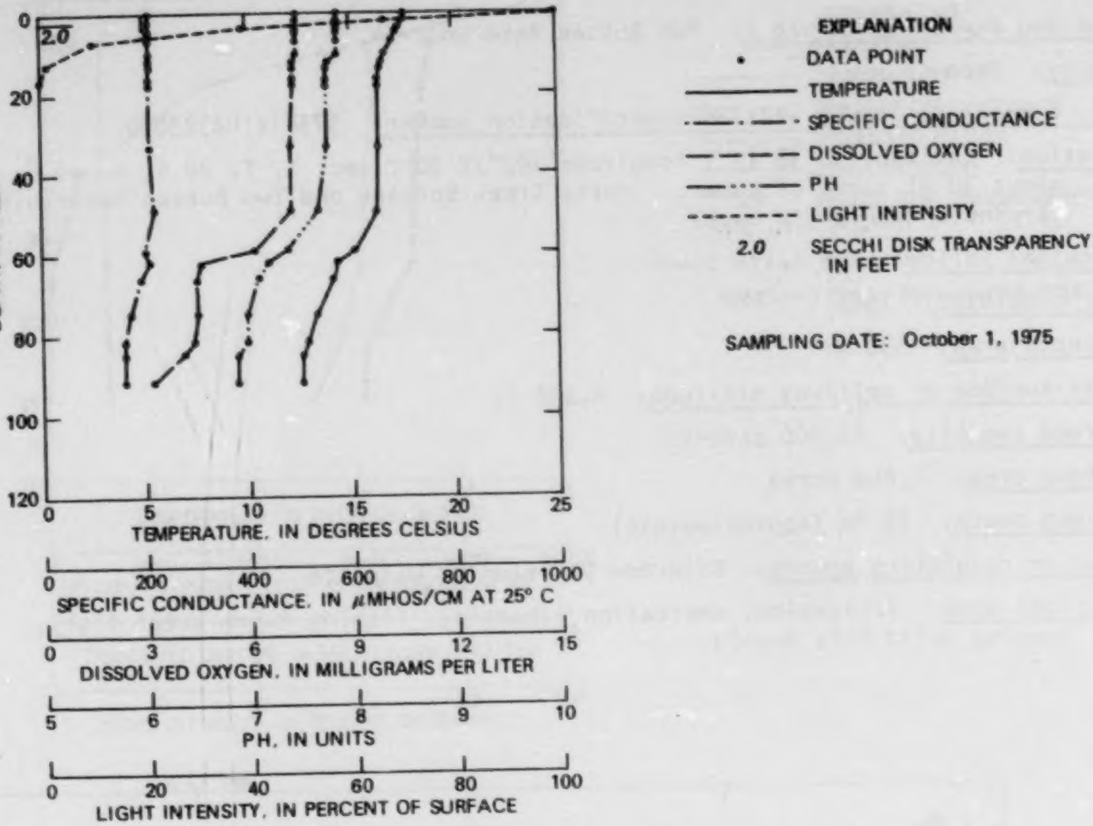
Surface area: 15,600 acres

Maximum depth: 85 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation)

Principal uses: Irrigation, flood control, river regulation, recreation (fishing, camping-campgrounds, boating-ramps).


107°22'30"
Piedra River
151
Arboles
NAVAJO RESERVOIR
San Juan River
37°
NEW MEXICO
0 1 2 3 MILES
0 1 2 3 KILOMETERS



SAMPLING DATE: October 1, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT 01...	1.6	82	26	4.2	9.4	1.8	80	66	29	1.1	.1	13
01...	85	83	27	3.8	6.9	1.4	74	61	27	1.6	.2	13

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
OCT 01...	124	.01	.02	.20	.22	.00	.03	.02	.00	3.9	--	--
01...	118	.11	.02	.18	.20	.02	.01	.03	.00	3.8	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
OCT 01...	--	--	40	--	10	--	--	--	--	--	--	1200
01...	--	--	10	--	10	--	--	--	--	--	--	--

Name and number on figure 1: Two Buttes Reservoir--4

County: Baca

U.S. Geological Survey station-identification number: 373812102323000

Location: Latitude 37°38'12", longitude 102°32'30"; sec. 1, T. 28 S, R. 46 W; about 30 mi south of Lamar. (Horse Creek Springs and Two Buttes Reservoir 7½-minute quadrangle maps)

Principal inflow: Two Butte Creek

Year completed: 1966

Drainage area: 530 mi^2

Water-surface or spillway altitude: 4,230 ft

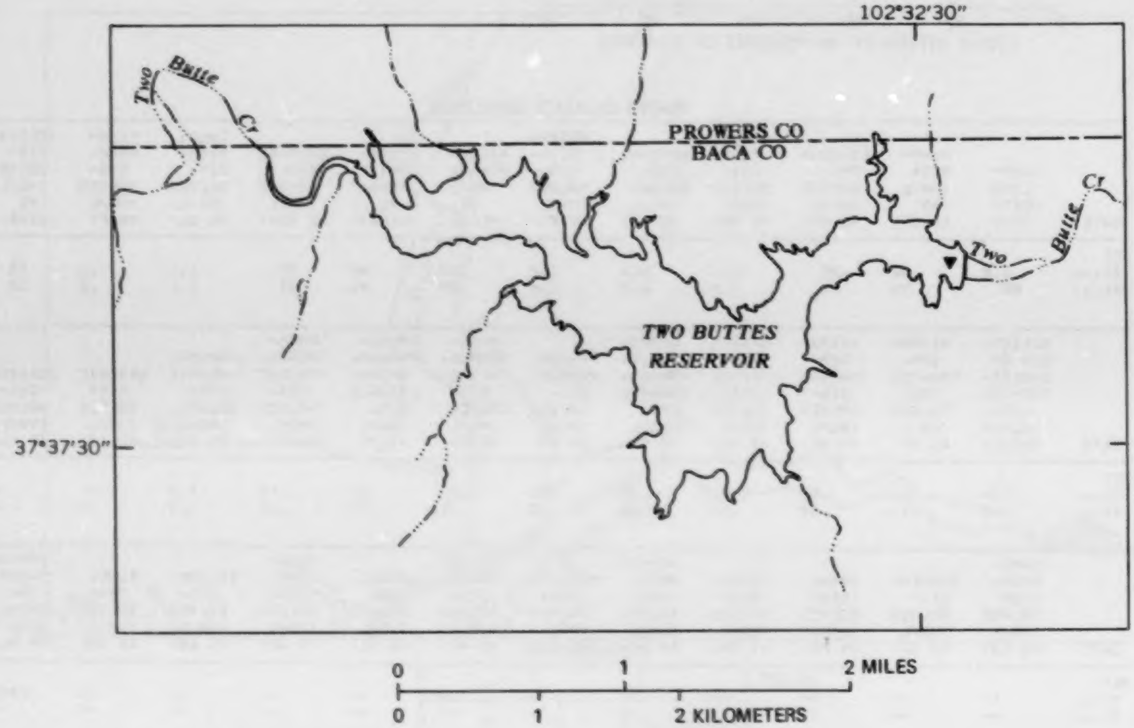
Storage capacity: 40,900 acre-ft

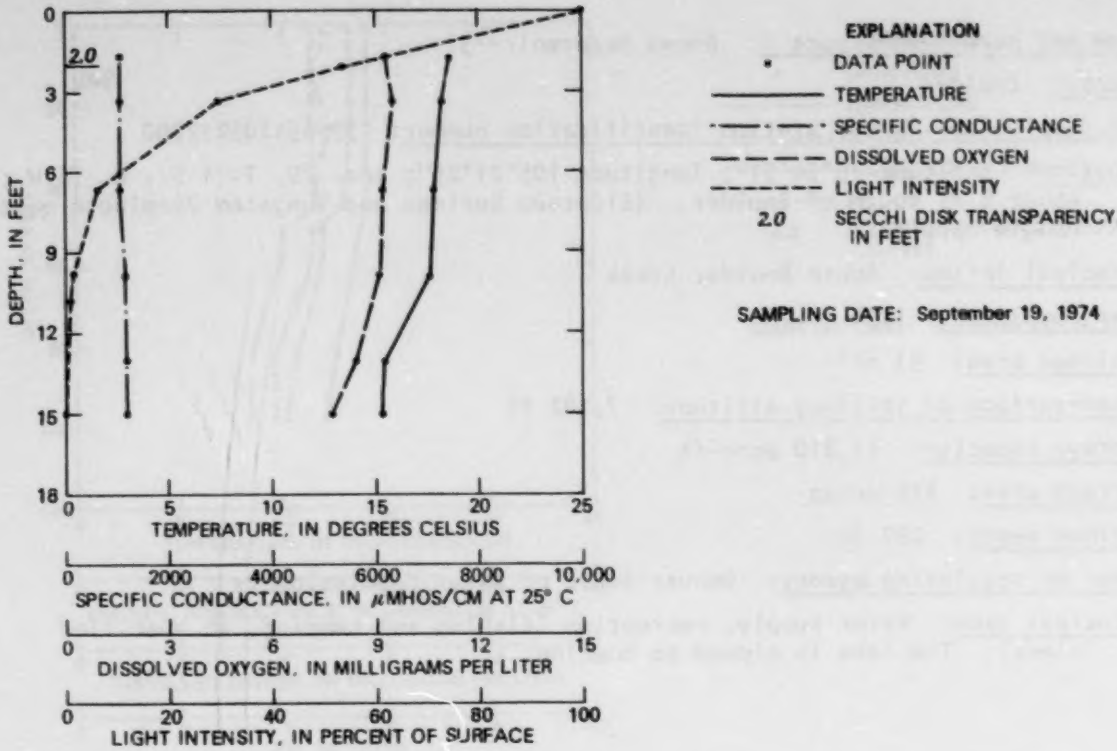
Surface area: 1,800 acres

Maximum depth: 15 ft (approximately)

Owner or regulating agency: Colorado Division of Wildlife

Principal uses: Irrigation, recreation [(boating, fishing (warm-water fish), hunting (wild-life area)].


102°32'30"
Two Butte Cr
PROWERS CO
BACA CO
Two Butte Cr
TWO BUTTES RESERVOIR
37°37'30"
0
1
2 MILES
0
1
2 KILOMETERS



SAMPLING DATE: September 19, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
19...	1.6	490	120	46	49	15	136	112	460	24	.7	5.4
19...	15	490	120	47	50	15	136	112	460	23	.7	5.5

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
19...	788	.08	.12	.98	1.1	.03	.00	--	--	8.6	--	--
19...	789	.09	.15	.95	1.1	.03	.00	.00	.03	12	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
19...	--	--	20	--	10	--	--	--	--	--	--	7800
19...	--	--	30	--	10	--	--	--	--	--	--	--

Name and number on figure 1: Gross Reservoir--5

County: Boulder

U.S. Geological Survey station-identification number: 395651105212500

Location: Latitude 39°56'51", longitude 105°21'25"; sec. 20, T. 1 S., R. 71 W.; about 8 mi south of Boulder. (Eldorado Springs and Tungsten 7½-minute quadrangle maps)

Principal inflow: South Boulder Creek

Year completed: 1954

Drainage area: 93 mi^2

Water-surface or spillway altitude: 7,282 ft

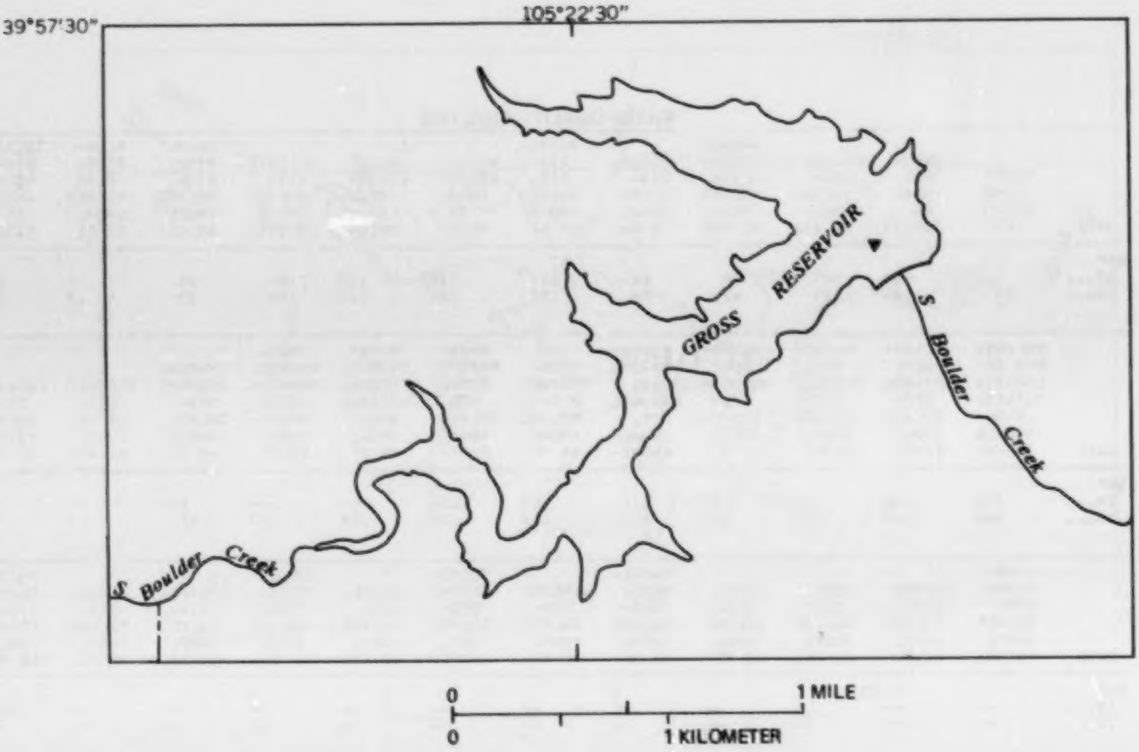
Storage capacity: 41,810 acre-ft

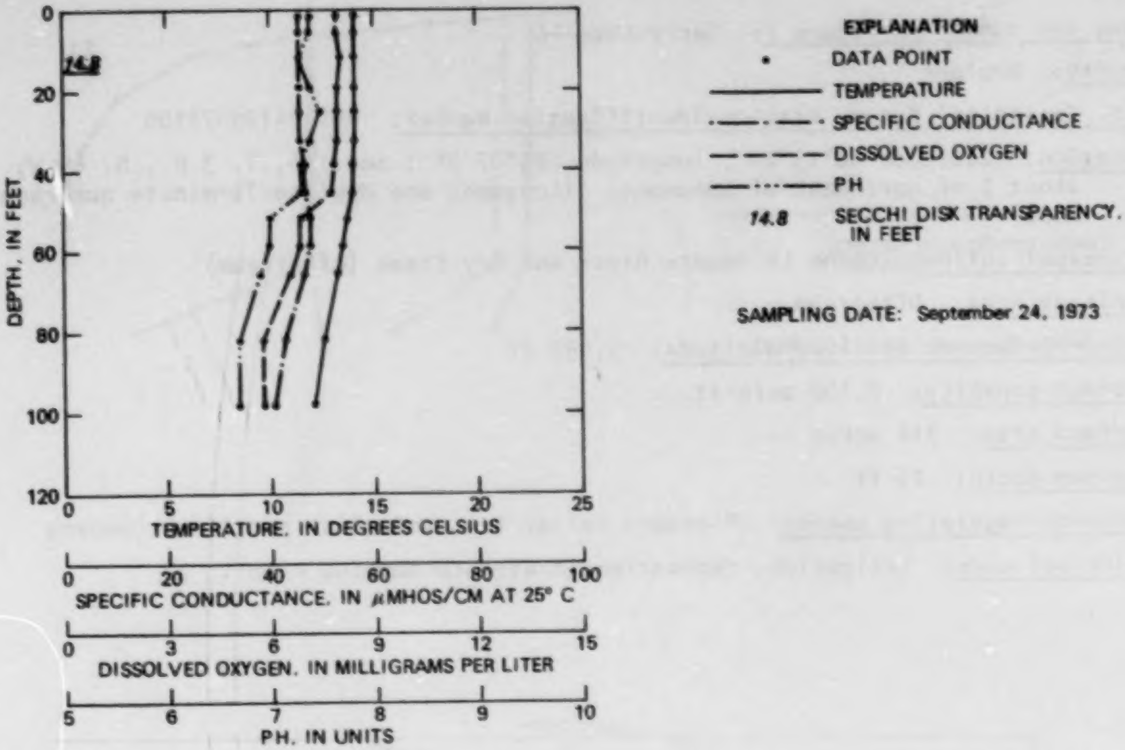
Surface area: 415 acres

Maximum depth: 297 ft

Owner or regulating agency: Denver Board of Water Commissioners

Principal uses: Water supply, recreation (fishing and camping, at specified times). The lake is closed to boating.


39°57'30"
105°22'30"
GROSS RESERVOIR
S. Boulder Creek
S. Boulder Creek
0
1 MILE
0
1 KILOMETER



SAMPLING DATE: September 24, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
24...	1.6	21	6.1	1.4	2.5	.6	22	18	5.7	.4	.5	6.5
24...	98	19	5.7	1.1	1.8	.6	22	18	5.7	.8	.2	7.0

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
24...	35	.01	--	--	--	.01	--	--	--	--	--	--
24...	34	.03	--	--	--	.02	--	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
24...	--	--	30	--	24	--	--	--	--	--	--	1200
24...	--	--	50	--	24	--	--	--	--	--	--	--

Name and number on figure 1: Terry Lake--6

County: Boulder

U.S. Geological Survey station-identification number: 401324105072100

Location: Latitude 40°13'24", longitude 105°07'21"; sec. 16, T. 3 N., R. 69 W; about 3 mi northwest of Longmont. (Longmont and Hygiene 7½-minute quadrangle maps)

Principal inflow: Cache La Poudre River and Dry Creek (offstream)

Drainage area: Offstream

Water-surface or spillway altitude: 5,093 ft

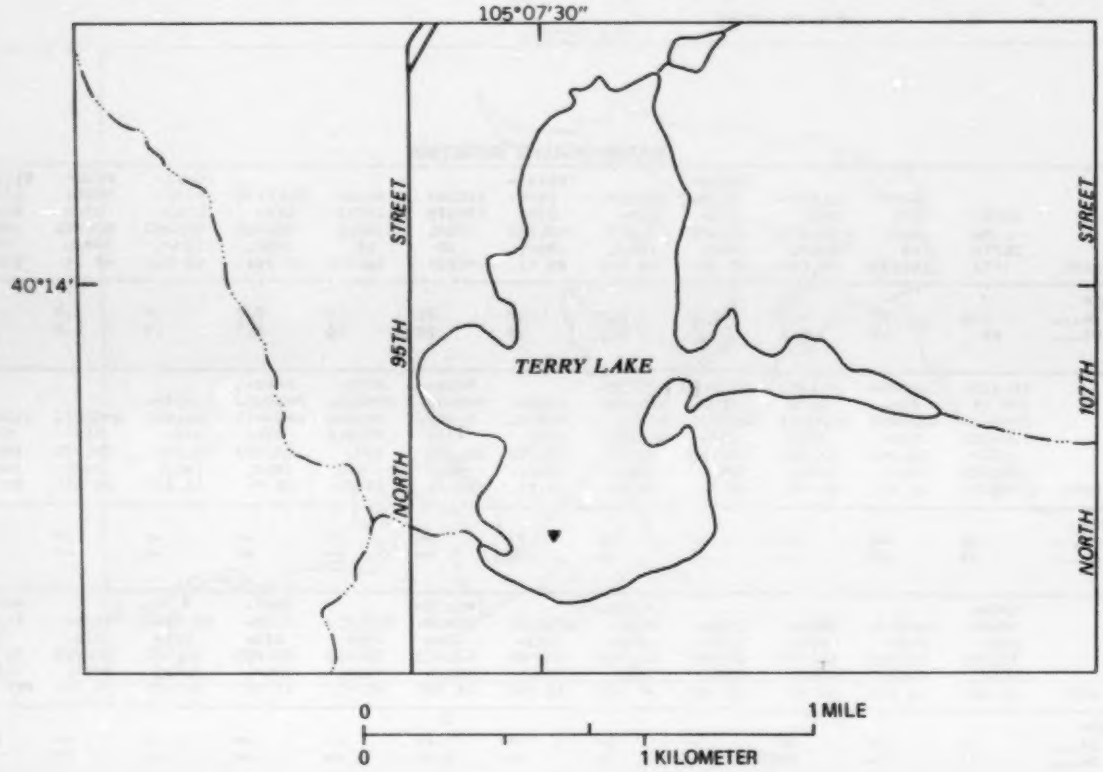
Storage capacity: 8,140 acre-ft

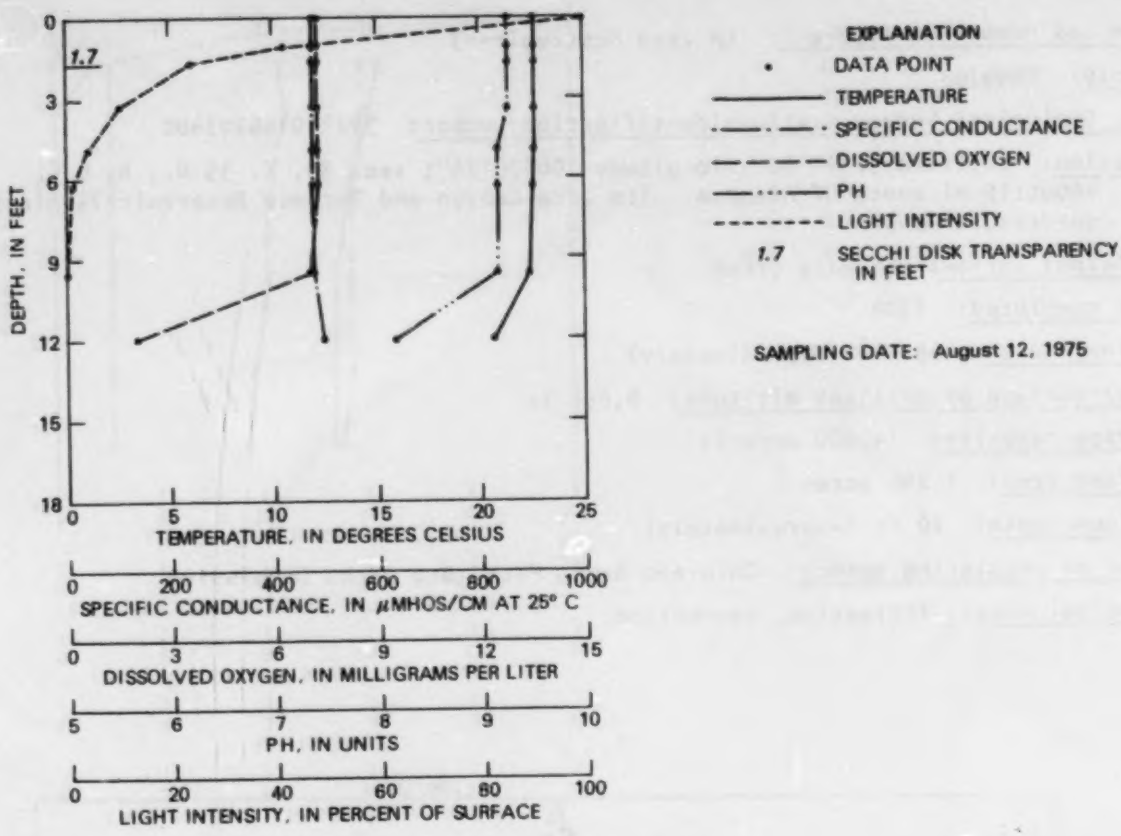
Surface area: 316 acres

Maximum depth: 15 ft

Owner or regulating agency: Pleasant Valley Reservoir Fish and Ditch Company

Principal uses: Irrigation, recreation (leased to boating club).


105°07'30"
40°14'
NORTH 95TH STREET
NORTH 107TH STREET
TERRY LAKE
0
1 MILE
0
1 KILOMETER



SAMPLING DATE: August 12, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 12...	1.6	170	35	21	35	1.7	122	100	150	4.1	.4	5.5
12...	11	180	37	21	34	1.6	124	102	140	2.7	.4	5.8

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 12...	313	.01	.01	.11	.12	.01	.00	.01	.00	22	--	--
12...	304	.08	.00	.04	.04	.02	.00	.02	.00	10	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 12...	--	--	10	--	0	--	--	--	--	--	--	4000
12...	--	--	20	--	0	--	--	--	--	--	--	--

Name and number on figure 1: La Jara Reservoir--7

County: Conejos

U.S. Geological Survey station-identification number: 371440106202400

Location: Latitude 37°14'40", longitude 106°20'24"; sec. 30, T. 35 N., R. 6 E; about 15 mi south of Alamosa. (La Jara Canyon and Terrace Reservoir 7½-minute quadrangle maps)

Principal inflow: La Jara Creek

Year completed: 1904

Drainage area: 95 mi^2 (approximately)

Water-surface or spillway altitude: 9,698 ft

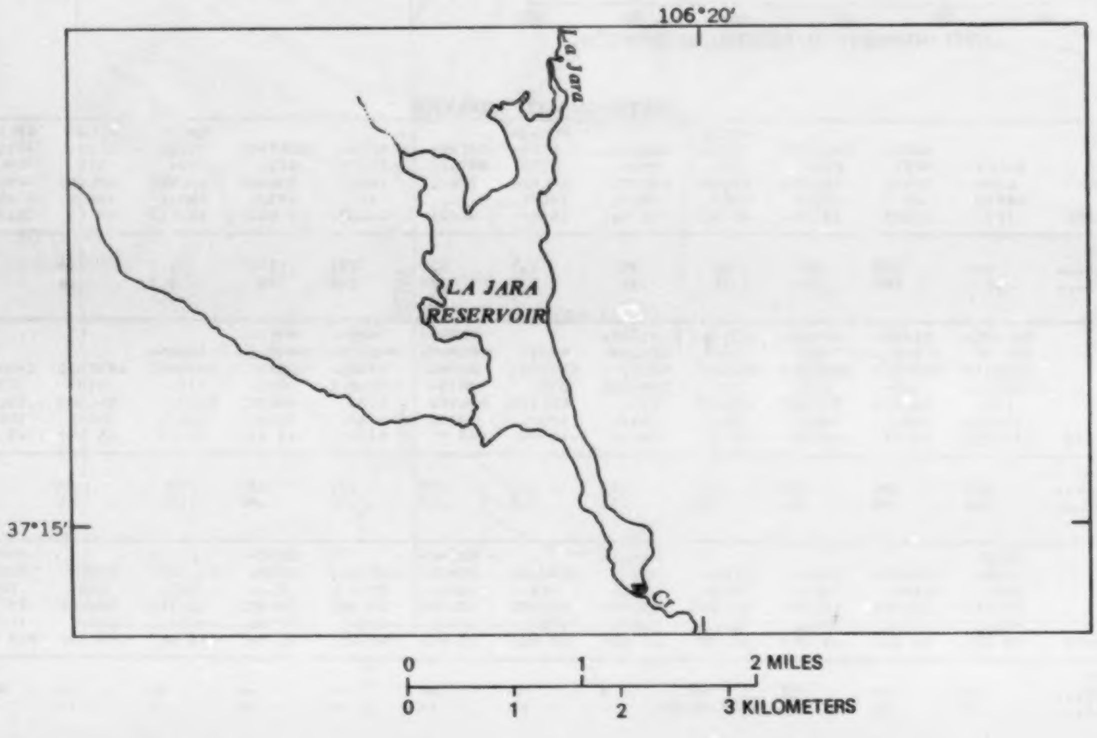
Storage capacity: 14,000 acre-ft

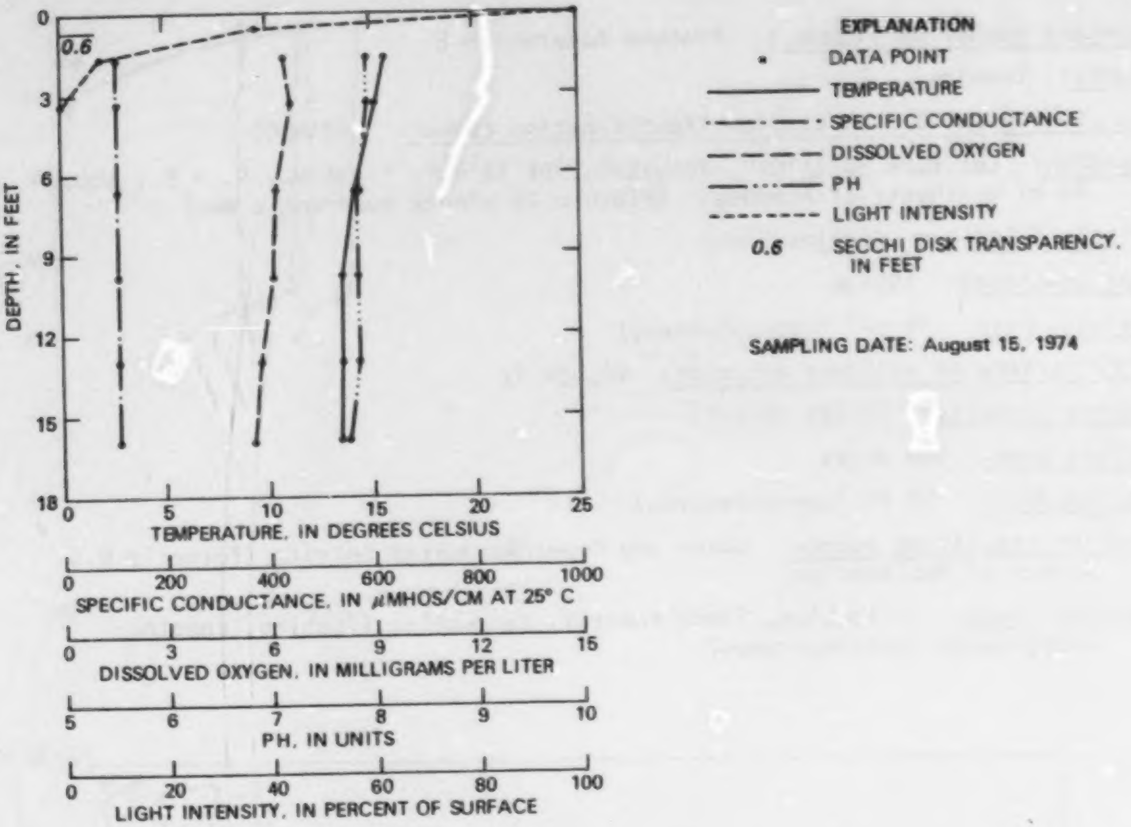
Surface area: 1,240 acres

Maximum depth: 20 ft (approximately)

Owner or regulating agency: Colorado Game, Fish, and Parks Commission

Principal uses: Irrigation, recreation.





SAMPLING DATE: August 15, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 15...	1.6	51	16	2.6	4.1	2.7	63	52	6.8	2.4	.1	23
15...	16	47	15	2.2	4.9	2.6	62	51	6.4	2.5	.1	22

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 15...	91	.34	.05	1.1	1.1	.05	.01	.00	.04	12	--	--
15...	89	.32	.08	1.0	1.1	.07	.02	.01	.04	11	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 15...	--	--	540	--	10	--	--	--	--	--	--	23000
15...	--	--	110	--	10	--	--	--	--	--	--	--

Name and number on figure 1: Platoro Reservoir--8

County: Conejos

U.S. Geological Survey station-identification number: 08244500

Location: Latitude 37°21'01", longitude 106°32'43"; T. 36 N., R. 4 E.; about 40 mi southeast of Alamosa. (Platoro 7½-minute quadrangle map)

Principal inflow: Conejos River

Year completed: 1951

Drainage area: 40 mi^2 (approximately)

Water-surface or spillway altitude: 10,034 ft

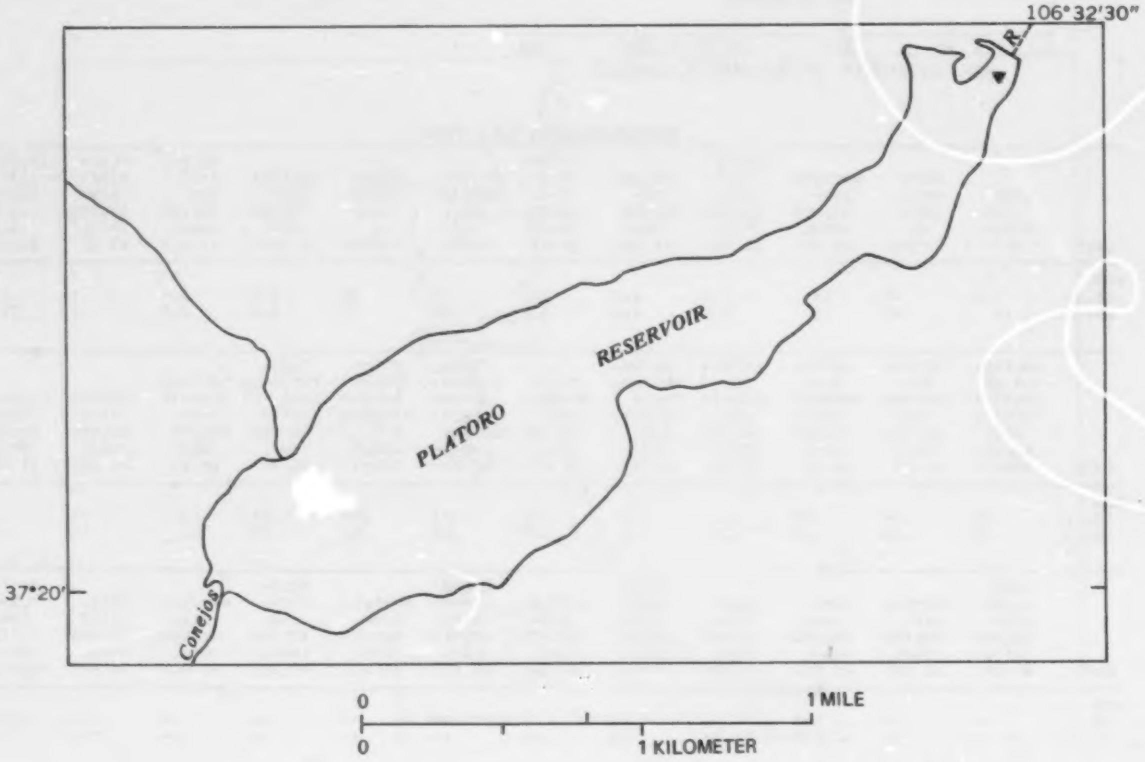
Storage capacity: 59,570 acre-ft

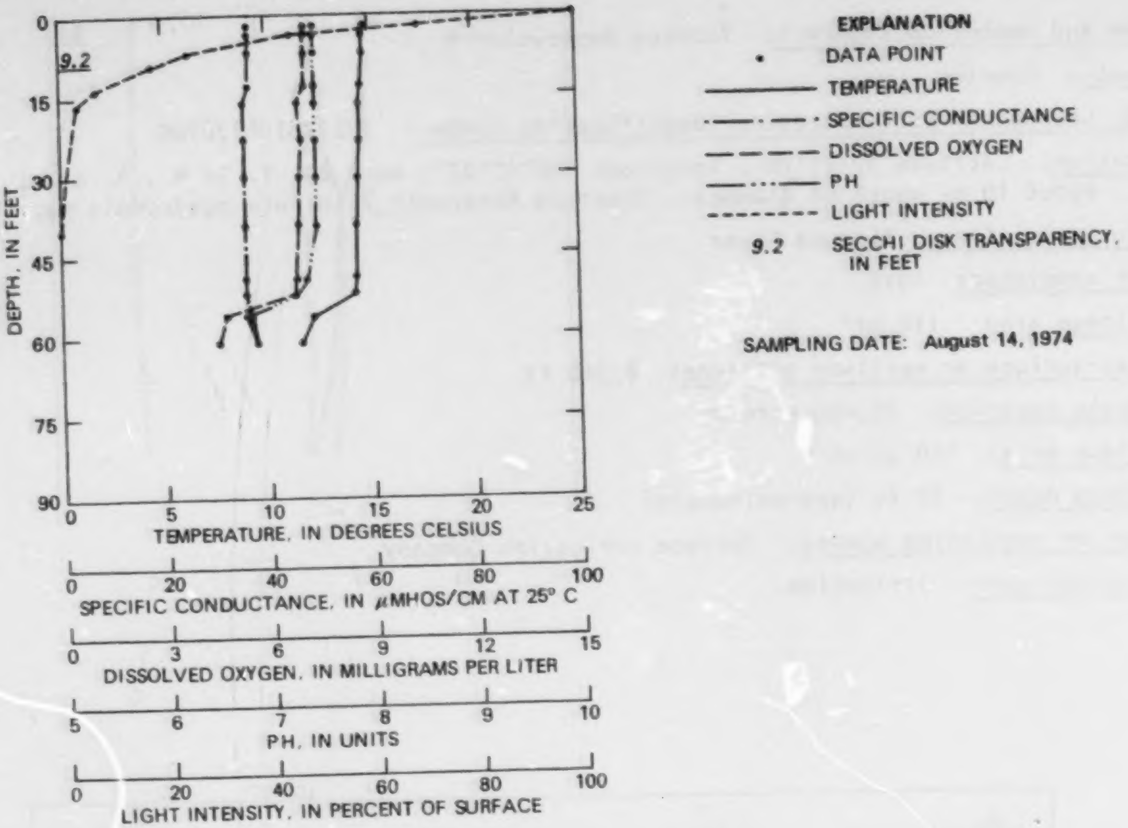
Surface area: 900 acres

Maximum depth: 60 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation)

Principal uses: Irrigation, flood control, recreation (fishing, camping-campgrounds, boating-ramps).





SAMPLING DATE: August 14, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DIS SOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
14...	1.6	17	4.8	1.3	1.3	.7	20	16	3.1	.8	.1	10
14...	61	14	4.7	.6	1.7	.7	21	17	3.0	.8	.1	11

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
14...	32	.01	.05	.14	.19	.01	.00	.02	.00	--	--	--
14...	33	.00	.06	.05	.11	.01	.00	.02	.00	17	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
14...	--	--	30	--	30	--	--	--	--	--	--	870
14...	--	--	59	--	60	--	--	--	--	--	--	--

Name and number on figure 1: Terrace Reservoir--9

County: Conejos

U.S. Geological Survey station-identification number: 372128106170700

Location: Latitude 37°21'28", longitude 106°17'07"; sec. 23, T. 36 N., R. 6 E.; about 10 mi south of Alamosa. (Terrace Reservoir 7½-minute quadrangle map)

Principal inflow: Alamosa River

Year completed: 1912

Drainage area: 116 mi^2

Water-surface or spillway altitude: 8,568 ft

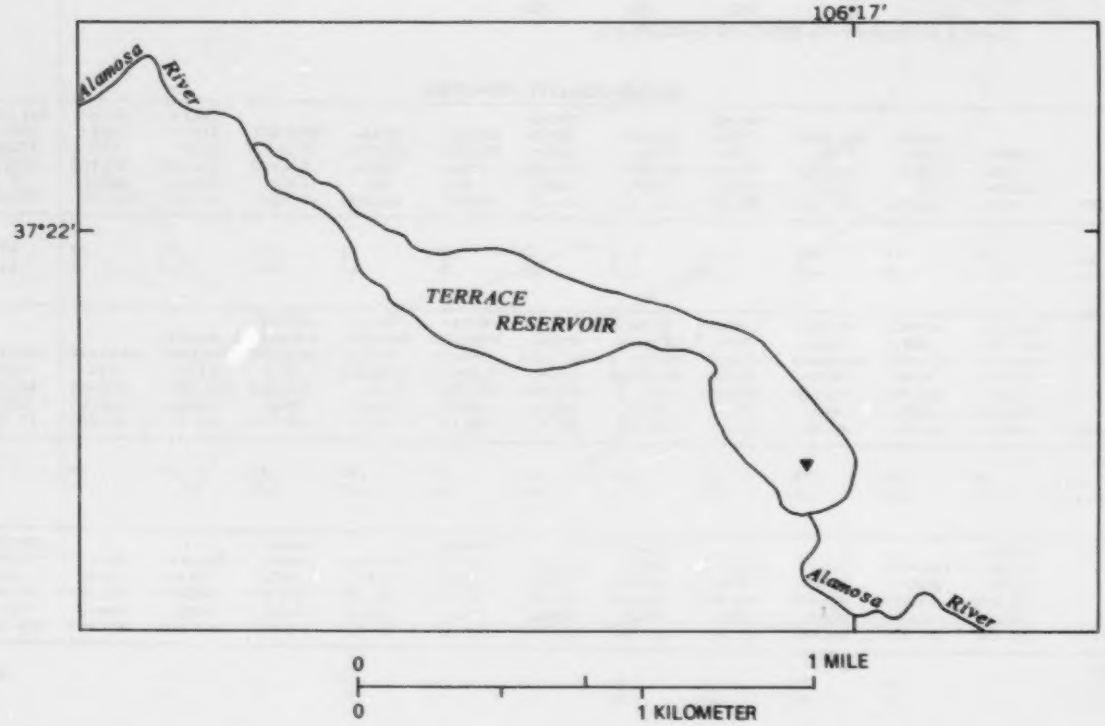
Storage capacity: 25,000 acre-ft

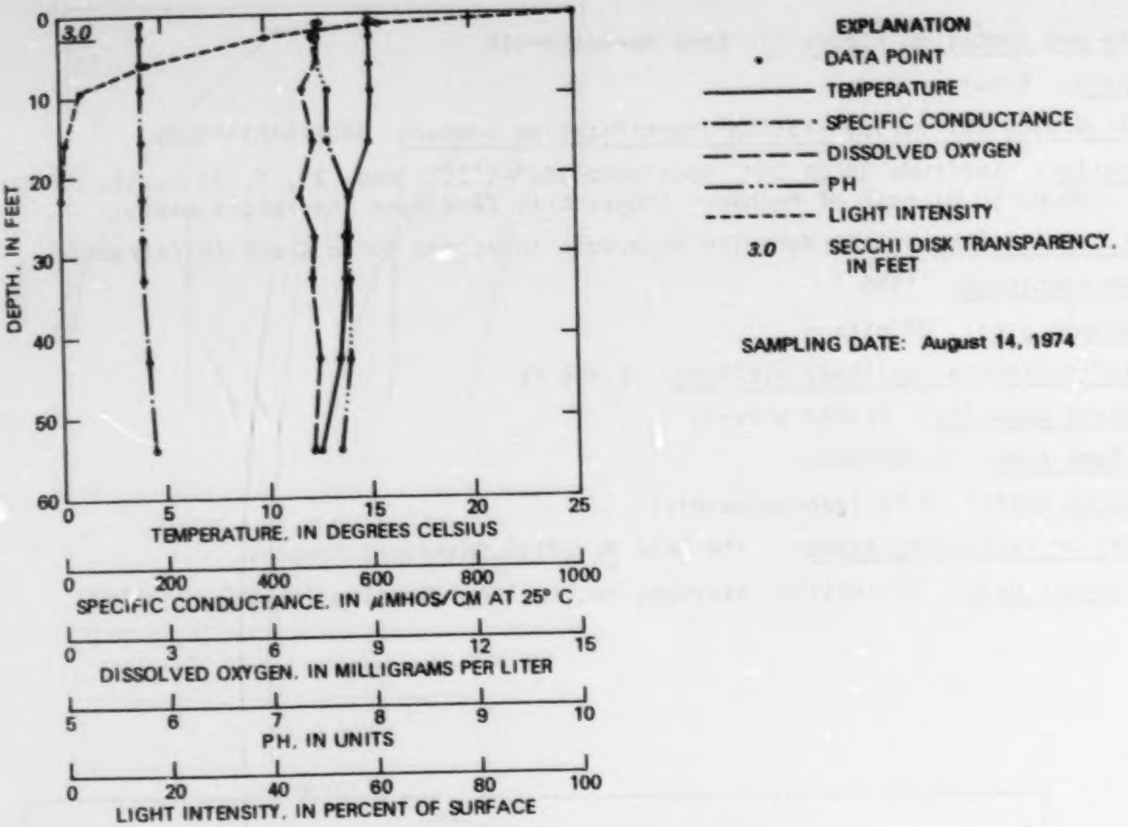
Surface area: 410 acres

Maximum depth: 60 ft (approximately)

Owner or regulating agency: Terrace Irrigation Company

Principal uses: Irrigation.


106°17'
37°22'
Alamosa River
TERRACE RESERVOIR
Alamosa River
0
1 MILE
0
1 KILOMETER



SAMPLING DATE: August 14, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 14...	1.6	68	21	3.8	3.0	1.0	12	10	63	.3	.2	12
14...	54	75	23	4.3	1.9	1.0	12	10	71	1.5	.3	13

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 14...	111	.02	.11	.10	.12	.00	.00	.02	.00	--	--	0
14...	123	.02	.08	.33	.41	.07	.02	.00	.05	--	--	0

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 14...	--	7	150	1	400	--	--	1	--	--	0	600
14...	--	6	100	1	420	--	--	2	--	--	20	--

Name and number on figure 1: Lake Meredith--10

County: Crowley

U.S. Geological Survey station-identification number: 380926103442500

Location: Latitude 38°09'26", longitude 103°44'25"; sec. 29, T. 21 S., R. 56 W.; about 50 mi east of Pueblo. (Sugar City 7½-minute quadrangle map)

Principal inflow: Lake Meredith Reservoir Inlet and Horse Creek (offstream)

Year completed: 1926

Drainage area: Offstream

Water-surface or spillway altitude: 4,254 ft

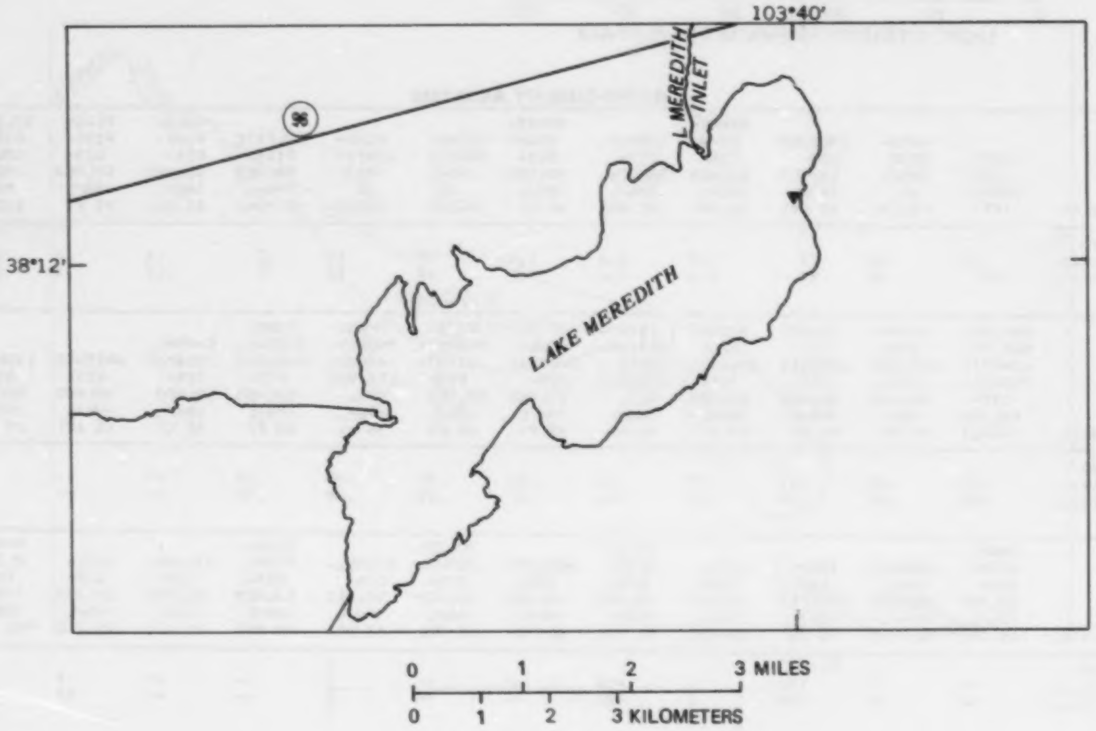
Storage capacity: 26,030 acre-ft

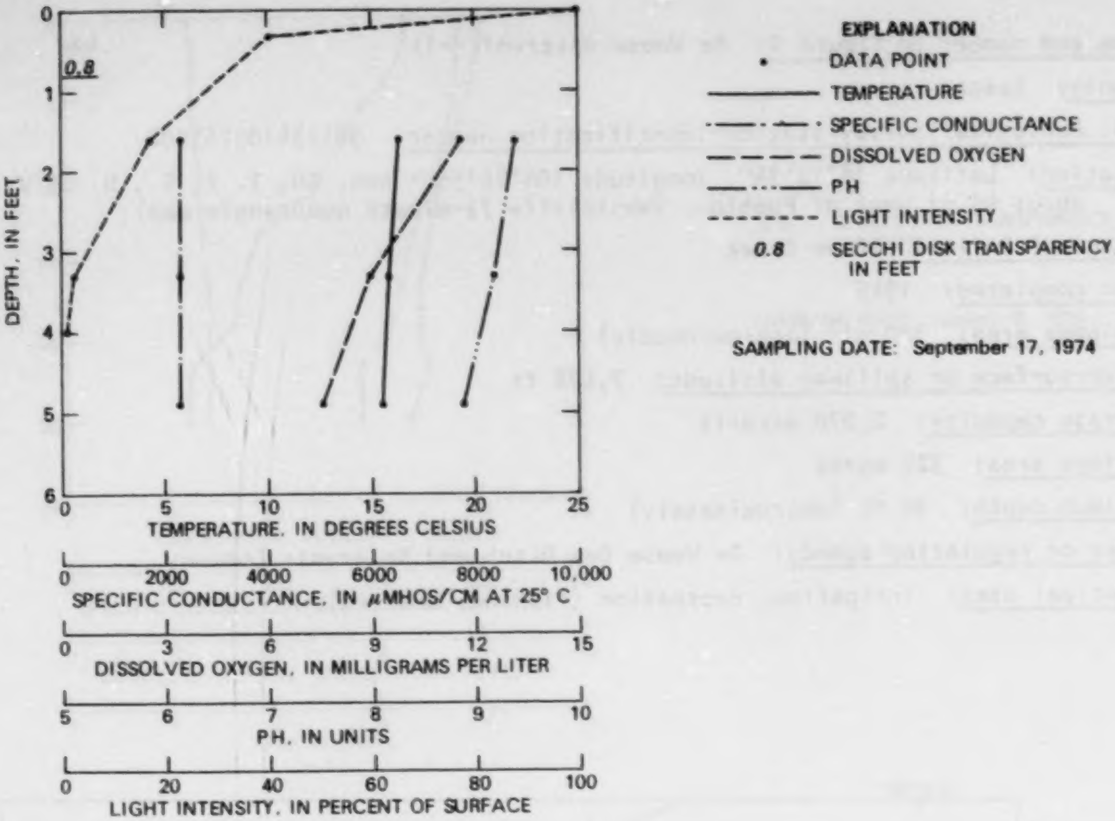
Surface area: 3,250 acres

Maximum depth: 5 ft (approximately)

Owner or regulating agency: The Lake Meredith Reservoir Company

Principal uses: Irrigation, storage, recreation, [boating (ramps), fishing].


103°40′
38°12′
96
L MEREDITH INLET
LAKE MEREDITH
0 1 2 3 MILES
0 1 2 3 KILOMETERS



SAMPLING DATE: September 17, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 17...	1.6	1100	190	140	430	12	91	75	1700	160	1.7	1.5
17...	4.9	1100	190	140	460	12	88	72	1700	160	1.8	1.6

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 17...	2680	.00	--	--	--	.02	.03	--	--	--	--	--
17...	2710	.00	--	--	--	.02	.03	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 17...	--	--	40	--	20	--	--	--	--	--	--	300000
17...	--	--	20	--	40	--	--	--	--	--	--	--

Name and number on figure 1: De Weese Reservoir--11

County: Custer

U.S. Geological Survey station-identification number: 381234105265500

Location: Latitude 38°12'34", longitude 105°26'55"; sec. 20, T. 21 S., R. 72 W.; about 45 mi west of Pueblo. (Westcliffe 7½-minute quadrangle map)

Principal inflow: Grape Creek

Year completed: 1915

Drainage area: 320 mi^2 (approximately)

Water-surface or spillway altitude: 7,678 ft

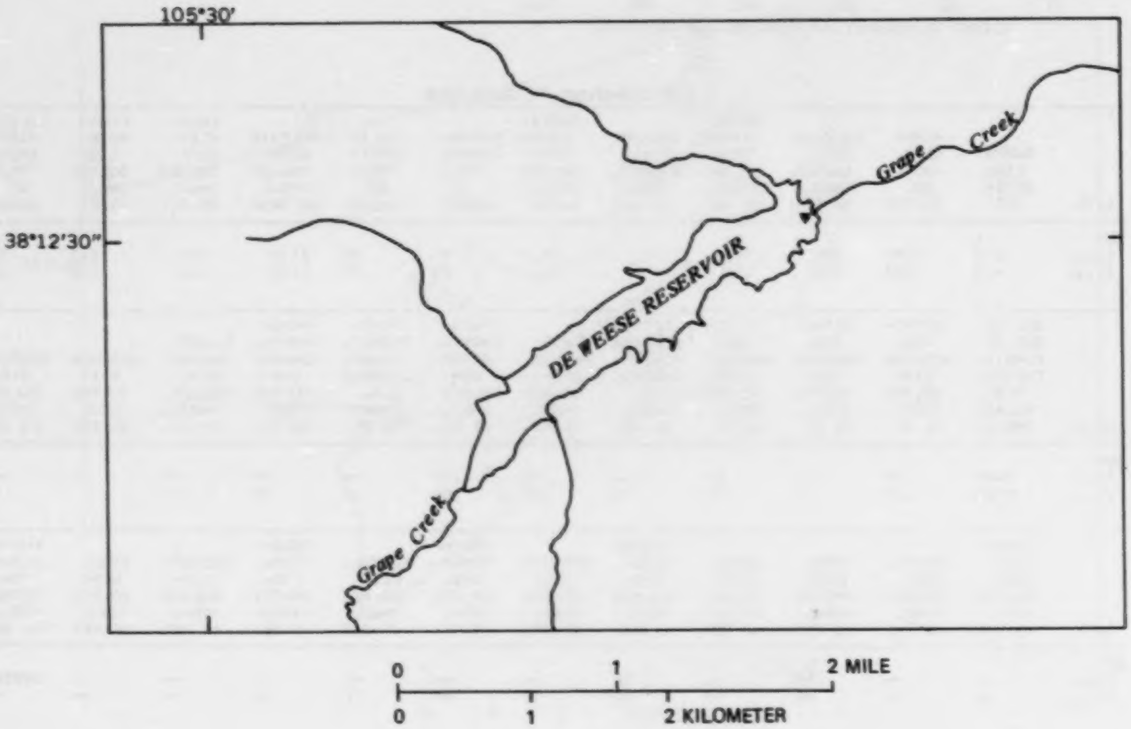
Storage capacity: 2,070 acre-ft

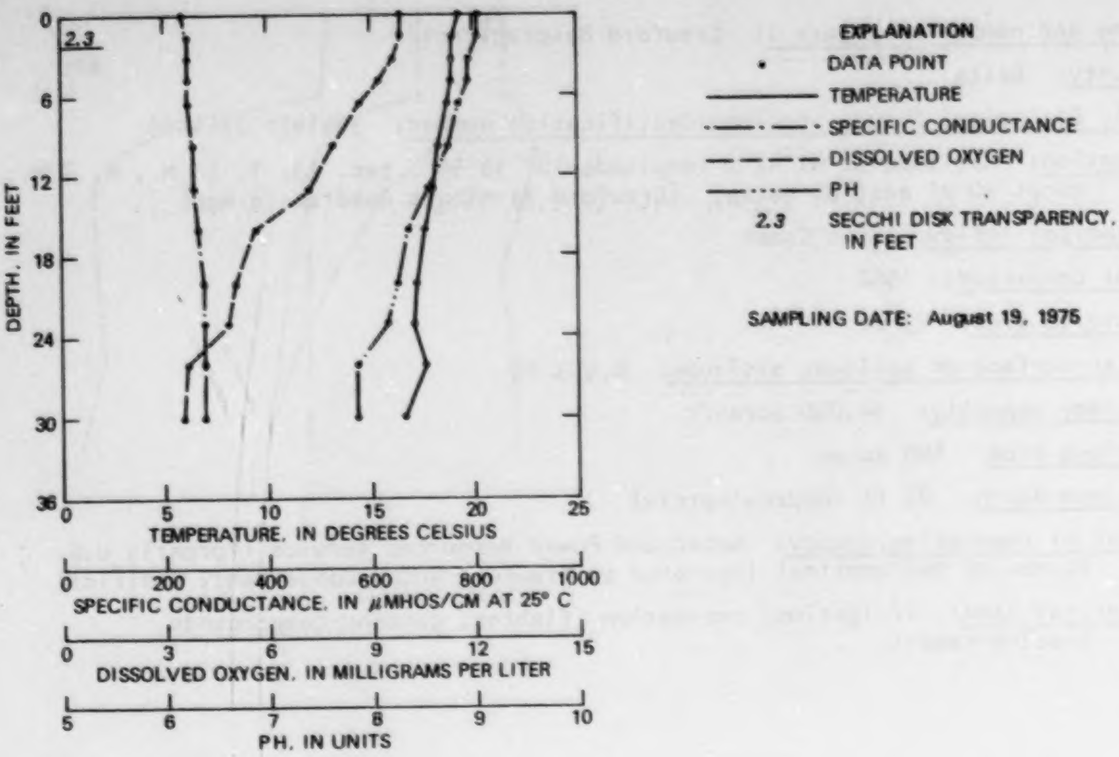
Surface area: 325 acres

Maximum depth: 30 ft (approximately)

Owner or regulating agency: De Weese Dye Ditch and Reservoir Company

Principal uses: Irrigation, recreation (fishing, boating).


105°30'
38°12'30"
Grape Creek
DE WEESE RESERVOIR
Grape Creek
0
1
2 MILE
0
1
2 KILOMETER



SAMPLING DATE: August 19, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 19...	1.6	120	34	8.0	6.7	1.3	132	112	13	1.5	.2	4.7
19...	30	130	38	9.0	6.7	1.5	150	123	13	1.5	.2	9.8

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 19...	137	.04	.00	.47	.47	.00	.00	.02	.00	25	--	--
19...	154	.01	.25	.37	.62	.07	.02	.01	.04	25	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 19...	--	--	10	--	0	--	--	--	--	--	--	190000
19...	--	--	10	--	400	--	--	--	--	--	--	--

Name and number on figure 1: Crawford Reservoir--12

County: Delta

U.S. Geological Survey station-identification number: 384142107364400

Location: Latitude 38°41'42", longitude 107°36'44"; sec. 13, T. 51 N., R. 7 W.; about 30 mi east of Delta. (Crawford 7½-minute quadrangle map)

Principal inflow: Iron Creek

Year completed: 1962

Drainage area: 75 mi^2

Water-surface or spillway altitude: 6,553 ft

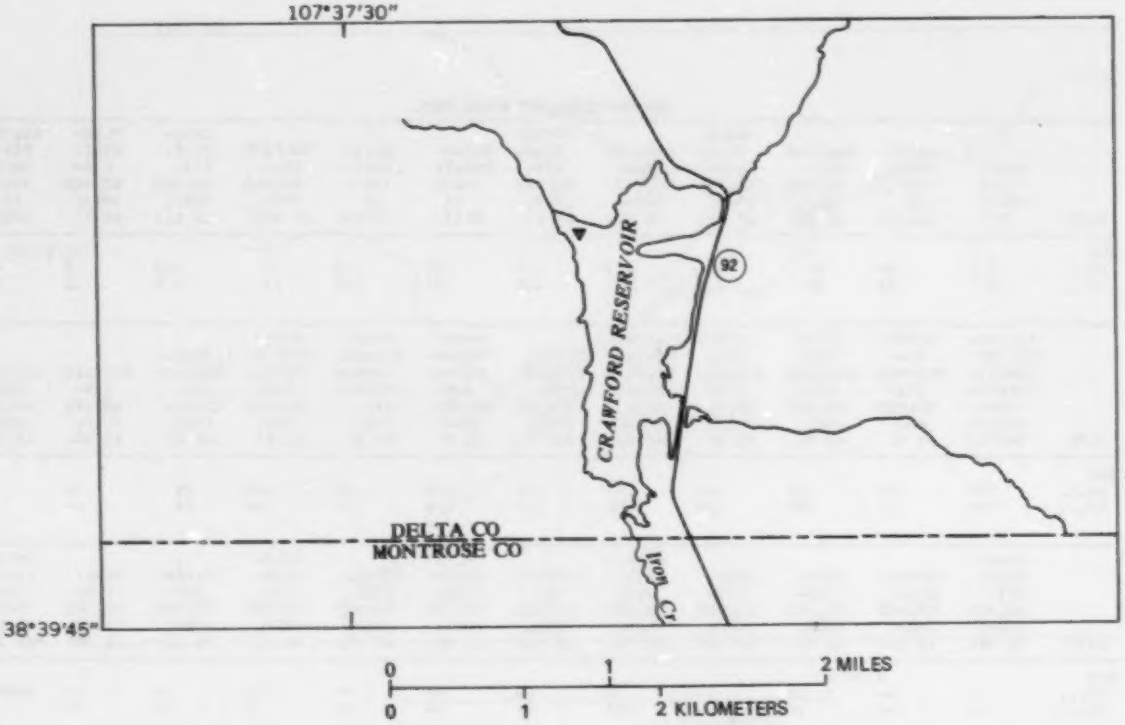
Storage capacity: 14,000 acre-ft

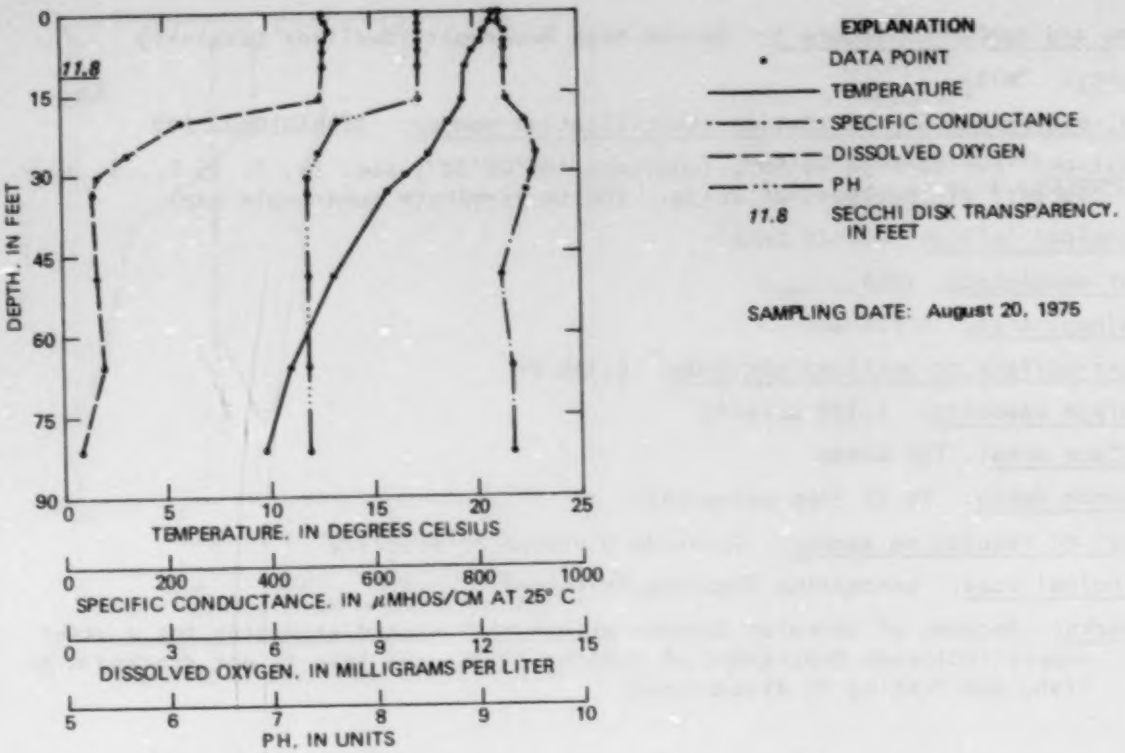
Surface area: 400 acres

Maximum depth: 85 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation) (operated by Crawford Water Conservancy District)

Principal uses: Irrigation, recreation (fishing, camping-campgrounds, boating-ramps).


107°37'30"
CRAWFORD RESERVOIR
92
DELTA CO
MONTROSE CO
Iron Cr
38°39'45"
0
1
2 MILES
0
1
2 KILOMETERS



SAMPLING DATE: August 20, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
20...	1.6	390	85	43	39	5.0	172	148	320	5.2	.4	19
20...	82	390	88	42	38	4.5	190	156	300	5.3	.3	20

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
20...	606	.05	.00	.30	.30	.02	.00	.00	.02	5.2	--	--
20...	593	.21	.00	.25	.25	.04	.00	.02	.02	5.0	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
20...	--	--	30	--	10	--	--	--	--	--	--	180
20...	--	--	40	--	150	--	--	--	--	--	--	--

Name and number on figure 1: Garnet Mesa Reservoir (Sweitzer Lake)--13

County: Delta

U.S. Geological Survey station-identification number: 384250108022200

Location: Latitude 38°42'50", longitude 108°02'22"; sec. 29, T. 15 S [illegible] R. 95 W.; about 3 mi southeast of Delta. (Delta 7½-minute quadrangle map)

Principal inflow: Garnet Canal

Year completed: 1953

Drainage area: Offstream

Water-surface or spillway altitude: 5,126 ft

Storage capacity: 1,330 acre-ft

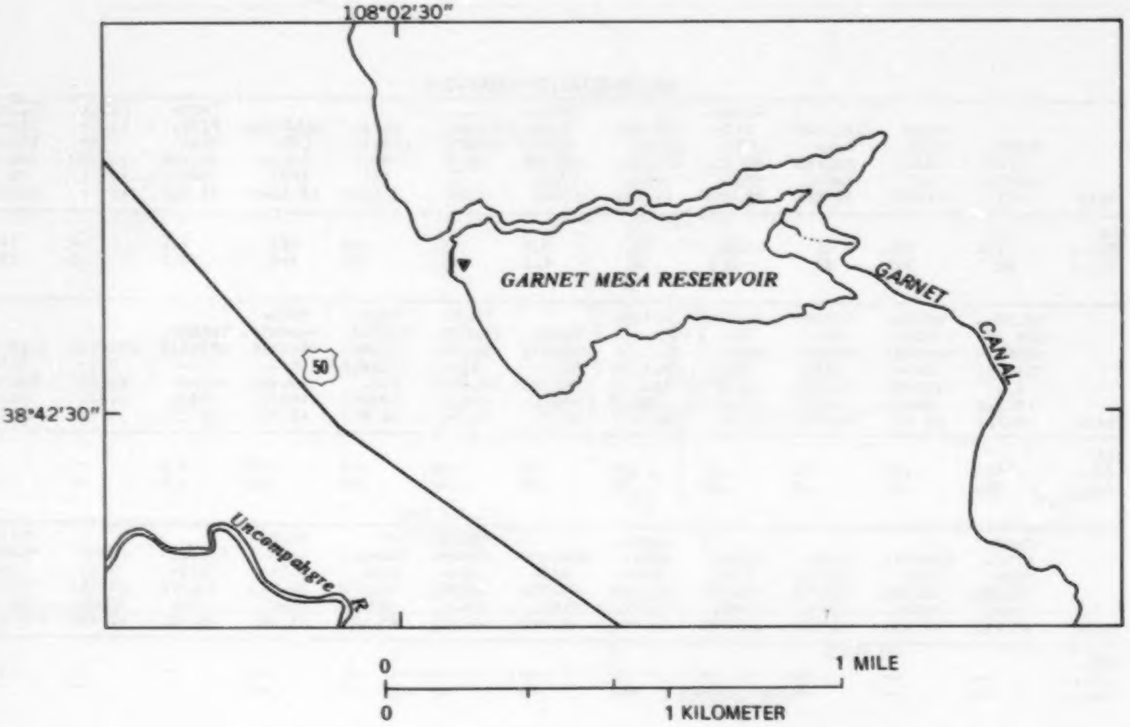
Surface area: 135 acres

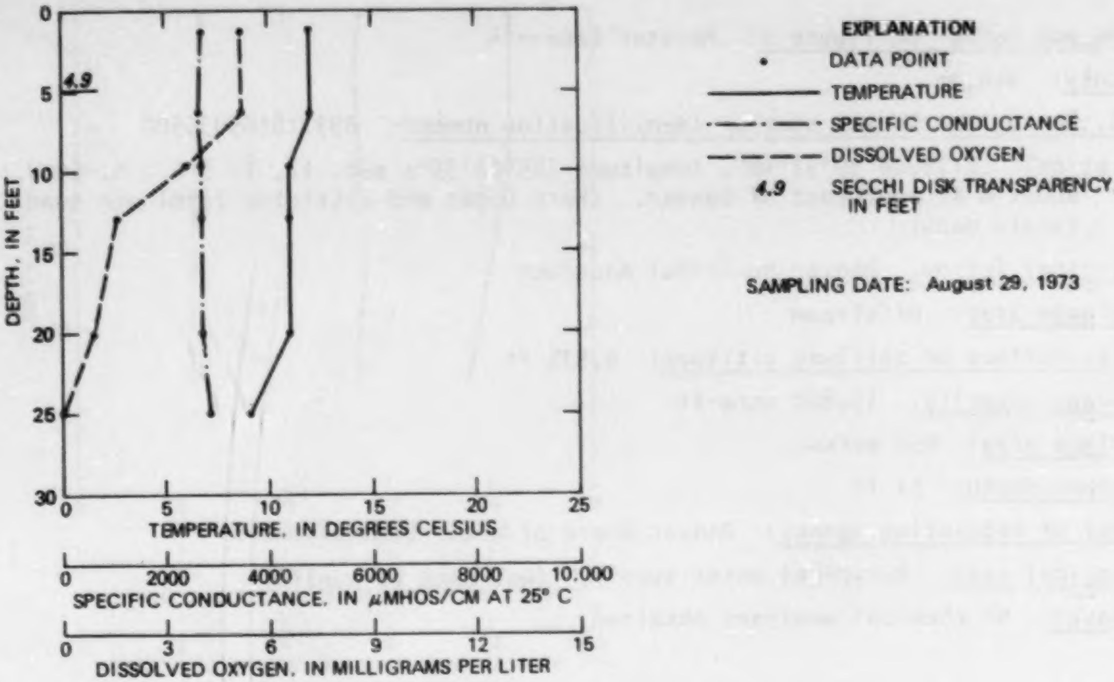
Maximum depth: 25 ft (approximately)

Owner or regulating agency: Colorado Division of Wildlife

Principal uses: Recreation (boating, fishing)

Remarks: Because of selenium concentrations that exceed standards for a water supply (Colorado Department of Health, 1977), the lake is not stocked with fish, and fishing is discouraged.


108°02'30"
38°42'30"
GARNET MESA RESERVOIR
GARNET CANAL
50
Uncompahgre R.
0
1 MILE
0
1 KILOMETER



SAMPLING DATE: August 29, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
29...	1.6	1100	230	130	440	10	94	77	2000	29	.6	3.6
29...	25	1100	240	130	450	12	247	203	2000	30	.6	6.4

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
29...	2890	.03	--	--	--	.02	.01	--	--	--	2	0
29...	2990	.01	--	--	--	.02	.00	--	--	--	0	0

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
29...	0	4	50	5	24	.0	4	2	14	0	10	1200
29...	0	2	80	6	310	.0	0	3	6	0	30	--

Name and number on figure 1: Marston Lake--14

County: Denver

U.S. Geological Survey station-identification number: 393718105035500

Location: Latitude 39°37'18", longitude 105°03'55"; sec. 12, T. 5 S., R. 69 W.; about 8 mi southeast of Denver. (Fort Logan and Littleton 7½-minute quadrangle maps)

Principal inflow: Denver Municipal Aqueduct

Drainage area: Offstream

Water-surface or spillway altitude: 5,535 ft

Storage capacity: 19,800 acre-ft

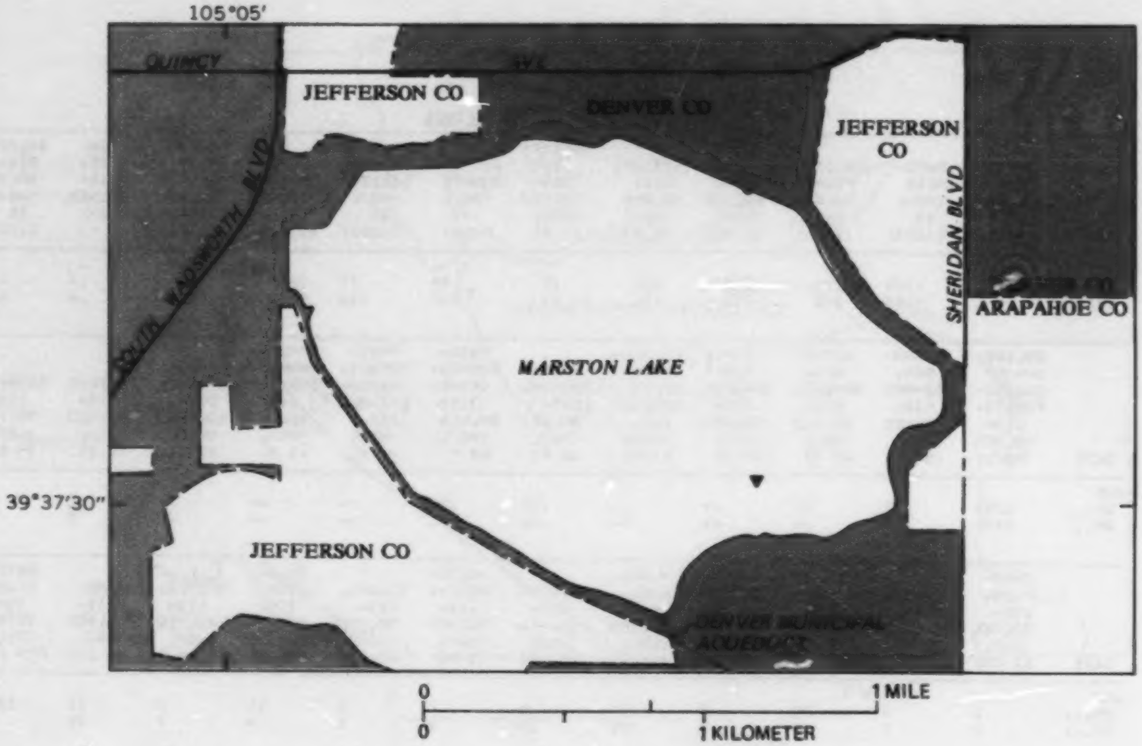
Surface area: 650 acres

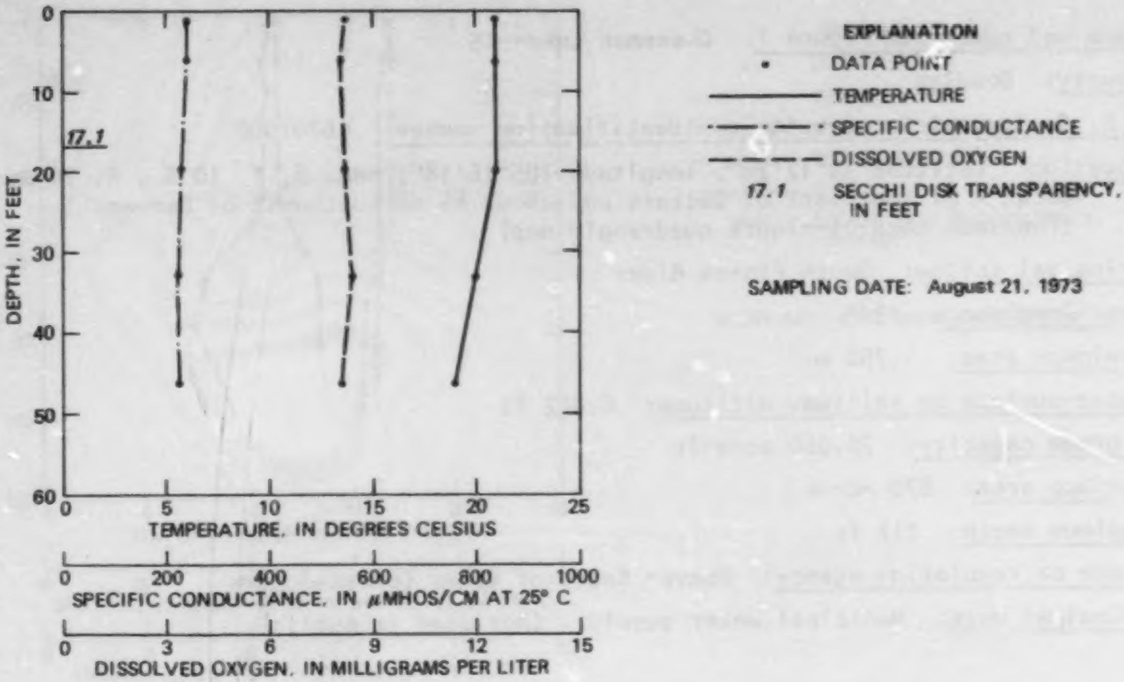
Maximum depth: 51 ft

Owner or regulating agency: Denver Board of Water Commissioners

Principal uses: Municipal water supply. (Not open to public)

Remarks: No chemical analyses obtained.


105°05'
QUINCY AVE
JEFFERSON CO
DENVER CO
JEFFERSON CO
SOUTH WADSWORTH BLVD
SHERIDAN BLVD
DENVER CO
ARAPAHOE CO
MARSTON LAKE
39°37'30"
JEFFERSON CO
DENVER MUNICIPAL AQUEDUCT
0
1 MILE
0
1 KILOMETER



SAMPLING DATE: August 21, 1973

Name and number on figure 1: Cheesman Lake--15

County: Douglas

U.S. Geological Survey station-identification number: 06701000

Location: Latitude 39°12'26", longitude 105°16'18"; sec. 6, T. 10 S., R. 70 W.; about 4 mi southeast of Deckers and about 45 mi southwest of Denver. (Cheesman Lake 7½-minute quadrangle map)

Principal inflow: South Platte River

Year Completed: 1905

Drainage area: 1,752 mi^2

Water-surface or spillway altitude: 6,842 ft

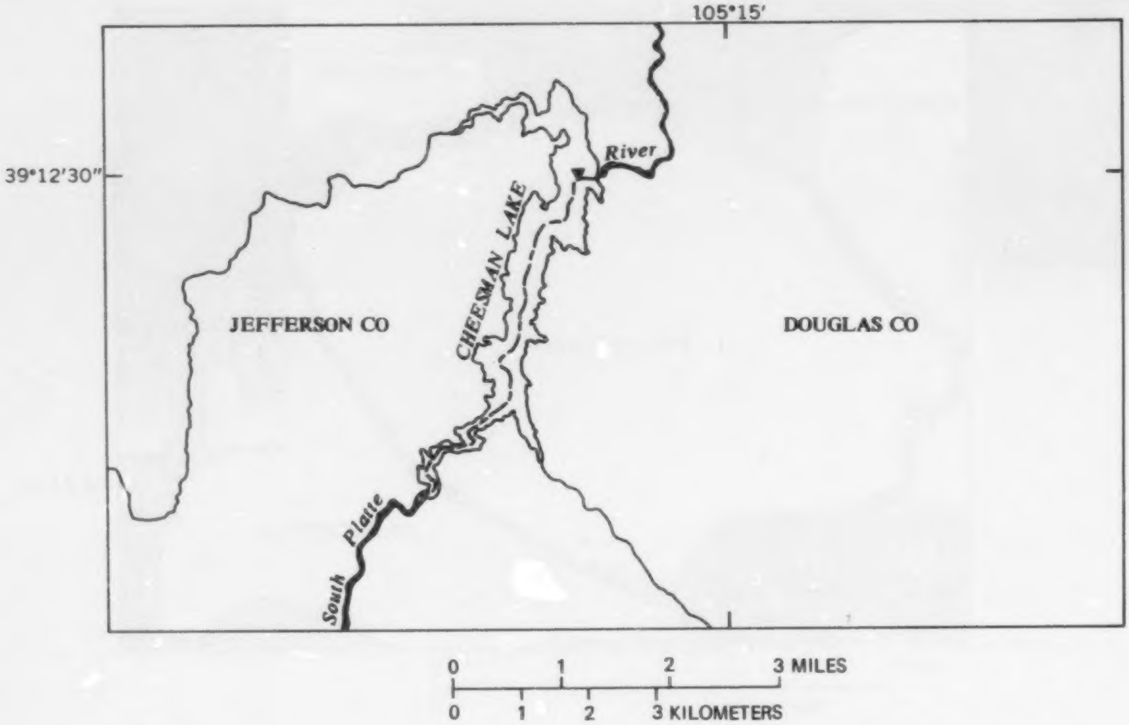
Storage capacity: 79,060 acre-ft

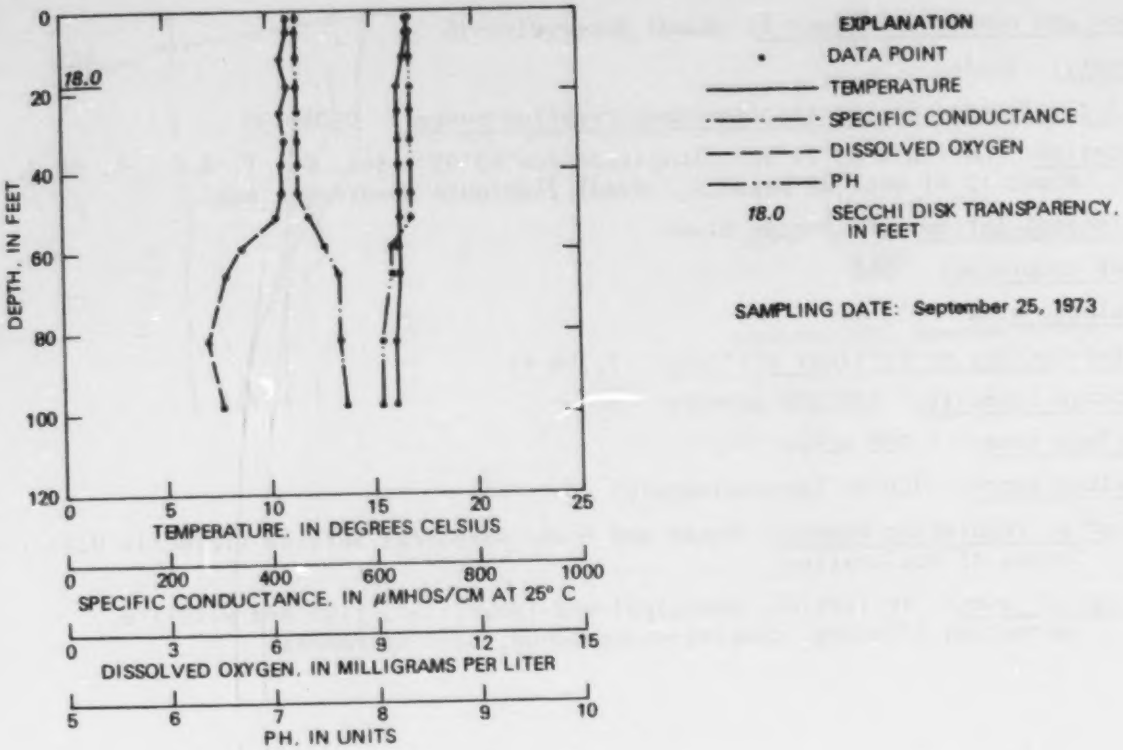
Surface area: 870 acres

Maximum depth: 212 ft

Owner or regulating agency: Denver Board of Water Commissioners

Principal uses: Municipal water supply. (Not open to public).


105°15'
39°12'30"
River
CHEESMAN LAKE
JEFFERSON CO
DOUGLAS CO
South Platte
0 1 2 3 MILES
0 1 2 3 KILOMETERS



SAMPLING DATE: September 25, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 25...	1.6	160	38	15	38	2.2	137	112	54	47	1.1	10
25...	98	160	38	15	37	2.2	136	113	53	46	.8	10

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 25...	273	.03	--	--	--	.03	--	--	--	--	--	--
25...	270	.01	--	--	--	.03	--	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 25...	--	--	40	--	17	--	--	--	--	--	--	4600
25...	--	--	30	--	8	--	--	--	--	--	--	--

Name and number on figure 1: Ruedi Reservoir--16

County: Eagle

U.S. Geological Survey station-identification number: 09080190

Location: Latitude 39°21'50", longitude 106°49'05"; sec. 18, T. 8 S., R. 84 W.; about 13 mi east of Basalt. (Ruedi 7½-minute quadrangle map)

Principal inflow: Fryingpan River

Year completed: 1968

Drainage area: 223 mi^2

Water-surface or spillway altitude: 7,766 ft

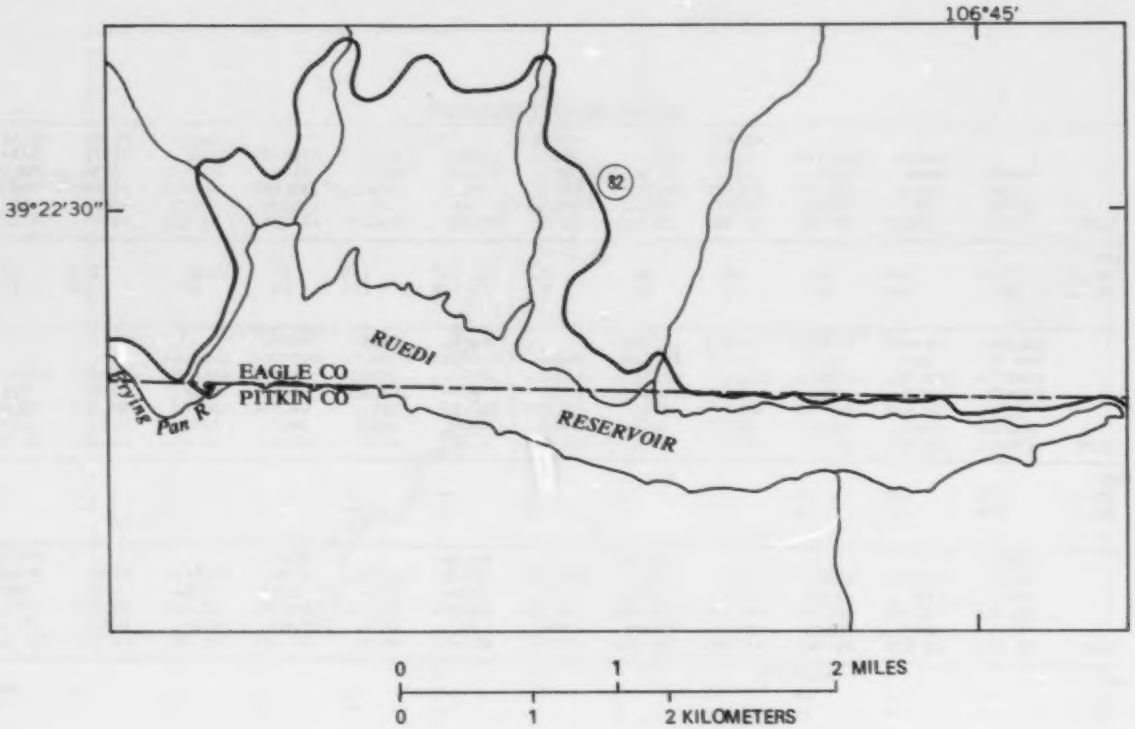
Storage capacity: 102,300 acre-ft

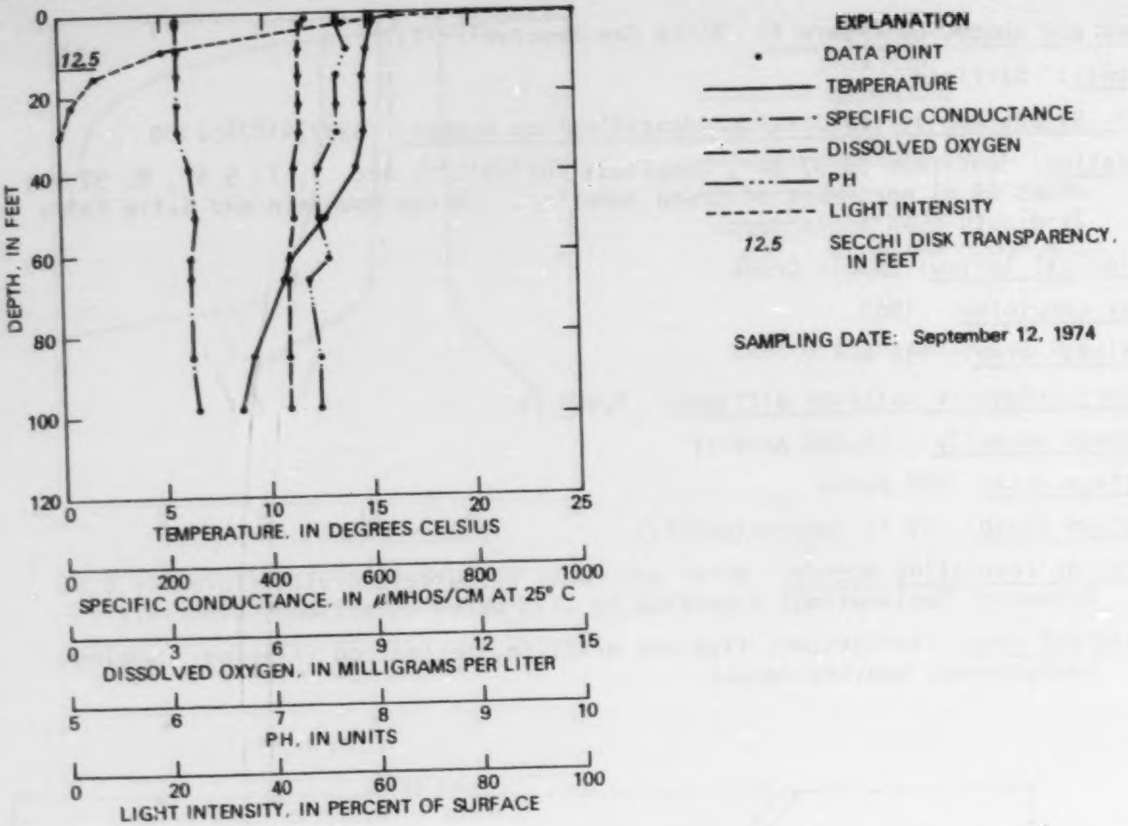
Surface area: 1,000 acres

Maximum depth: 100 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation)

Principal uses: Irrigation, municipal and industrial, fish and wildlife, recreation (fishing, camping-campgrounds, boating-ramps).


106°45'
39°22'30"
82
RUEDI
EAGLE CO
PITKIN CO
Frying Pan R
RESERVOIR
0
1
2 MILES
0
1
2 KILOMETERS



WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 12...	1.6	110	42	1.9	2.0	.2	48	39	71	1.3	.1	4.9
12...	98	120	47	1.7	1.4	.3	43	35	90	1.4	.1	5.7

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 12...	147	.00	--	--	--	.01	.00	--	--	--	--	--
12...	169	.00	--	--	--	.02	.01	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 12...	--	--	50	--	0	--	--	--	--	--	--	750
12...	--	--	30	--	0	--	--	--	--	--	--	--

Name and number on figure 1: Rifle Gap Reservoir--17

County: Garfield

U.S. Geological Survey station-identification number: 393734107452700

Location: Latitude 39°37'34", longitude 107°45'27"; sec. 7, T. 5 S., R. 92 W.; about 65 mi northeast of Grand Junction. (Horse Mountain and Rifle Falls 7½-minute quadrangle maps)

Principal inflow: Rifle Creek

Year completed: 1967

Drainage area: 136 mi^2

Water-surface or spillway altitude: 5,960 ft

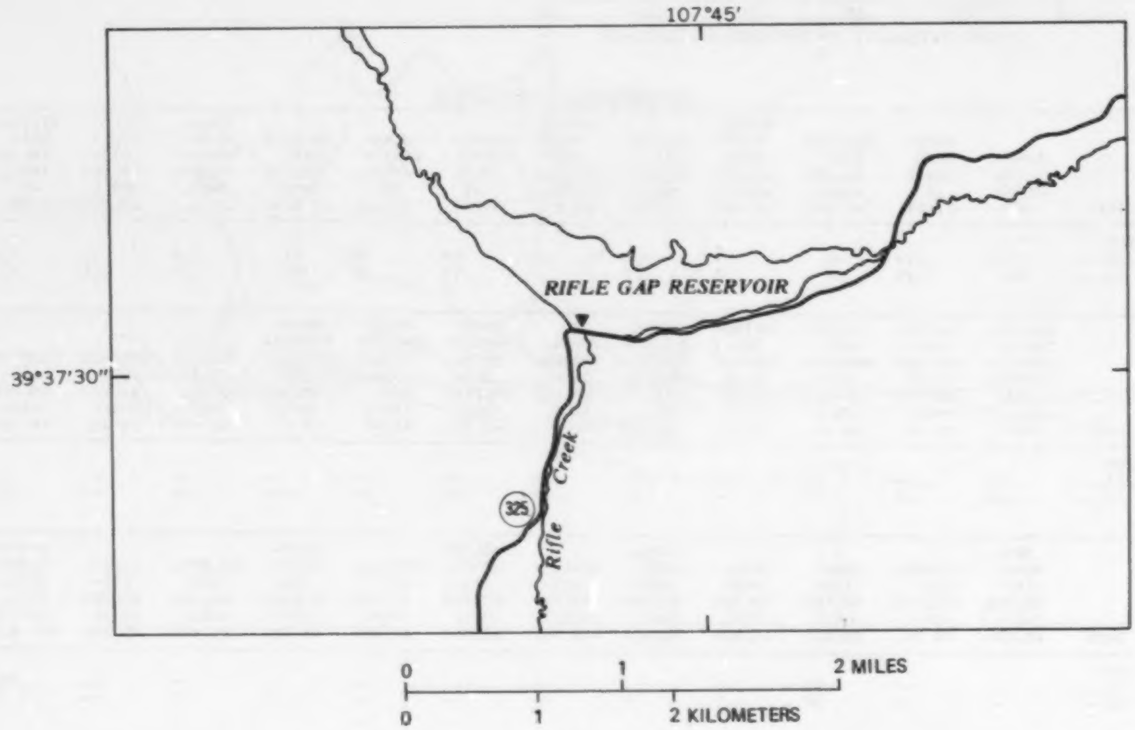
Storage capacity: 14,000 acre-ft

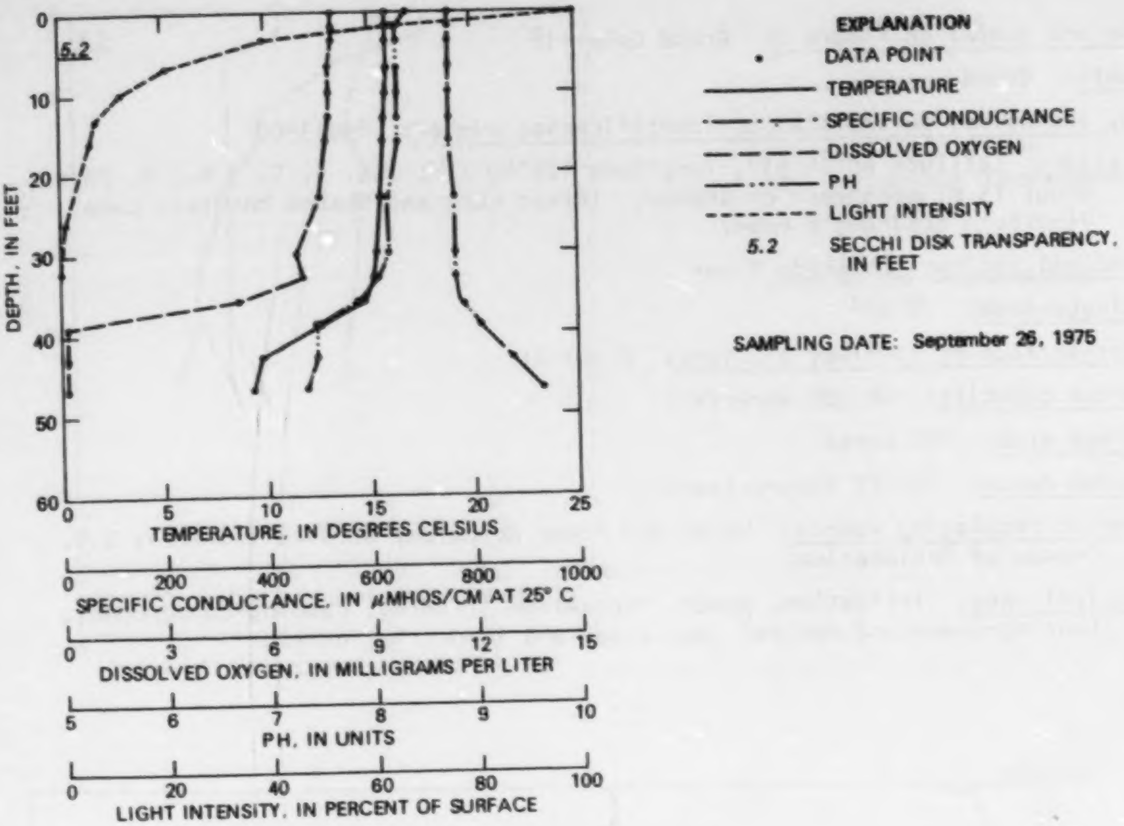
Surface area: 400 acres

Maximum depth: 50 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation) (operated by Silt Water Conservancy District)

Principal uses: Irrigation, fish and wildlife, recreation (fishing, camping-campgrounds, boating-ramps).





SAMPLING DATE: September 26, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 26...	1.6	400	95	39	22	2.7	206	169	250	5.9	.2	7.2
26...	47	470	110	47	26	3.0	269	221	280	8.6	.3	9.3

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 26...	524	.04	.03	.26	.29	.00	.00	.02	.00	5.0	--	--
26...	619	.05	.56	.13	.69	.00	.00	.01	.00	3.5	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 26...	--	--	20	--	20	--	--	--	--	--	--	1000
26...	--	--	70	--	1600	--	--	--	--	--	--	--

Name and number on figure 1: Grand Lake--18

County: Grand

U.S. Geological Survey station-identification number: 09013900

Location: Latitude 40°14'41", longitude 105°49'32"; sec. 5, T. 3 N., R. 75 W.; about 15 mi northeast of Granby. (Grand Lake and Shadow Mountain Lake 7½-minute quadrangle maps)

Principal inflow: Colorado River

Drainage area: 76 mi^2

Water-surface or spillway altitude: 8,367 ft

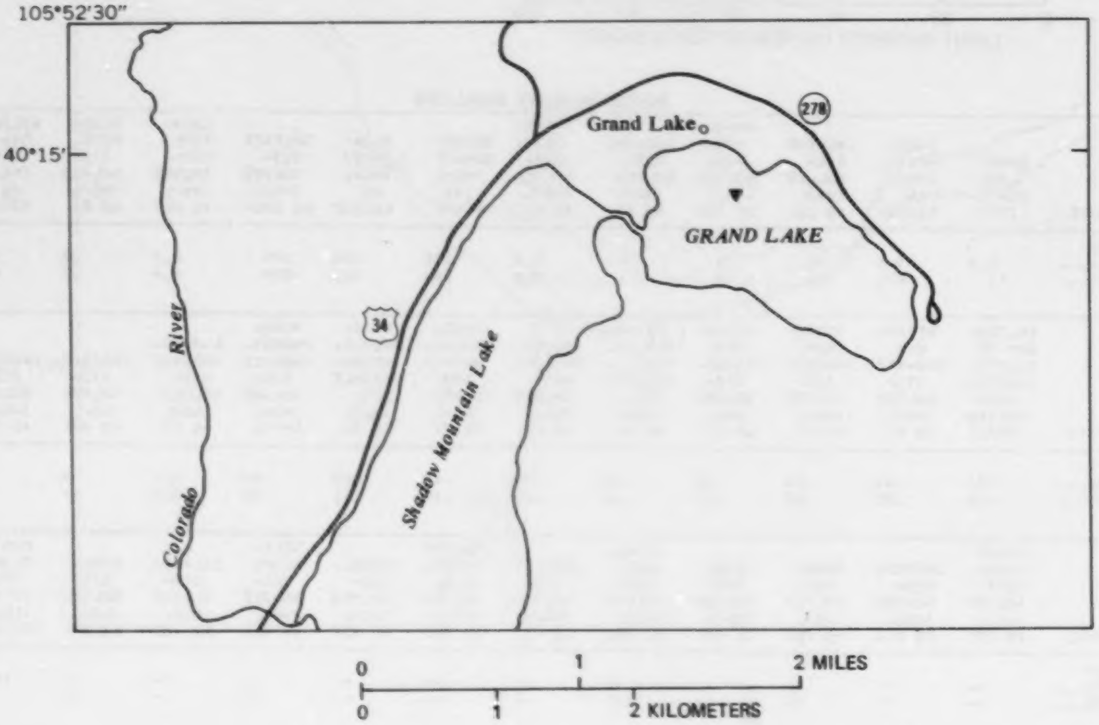
Storage capacity: 60,000 acre-ft

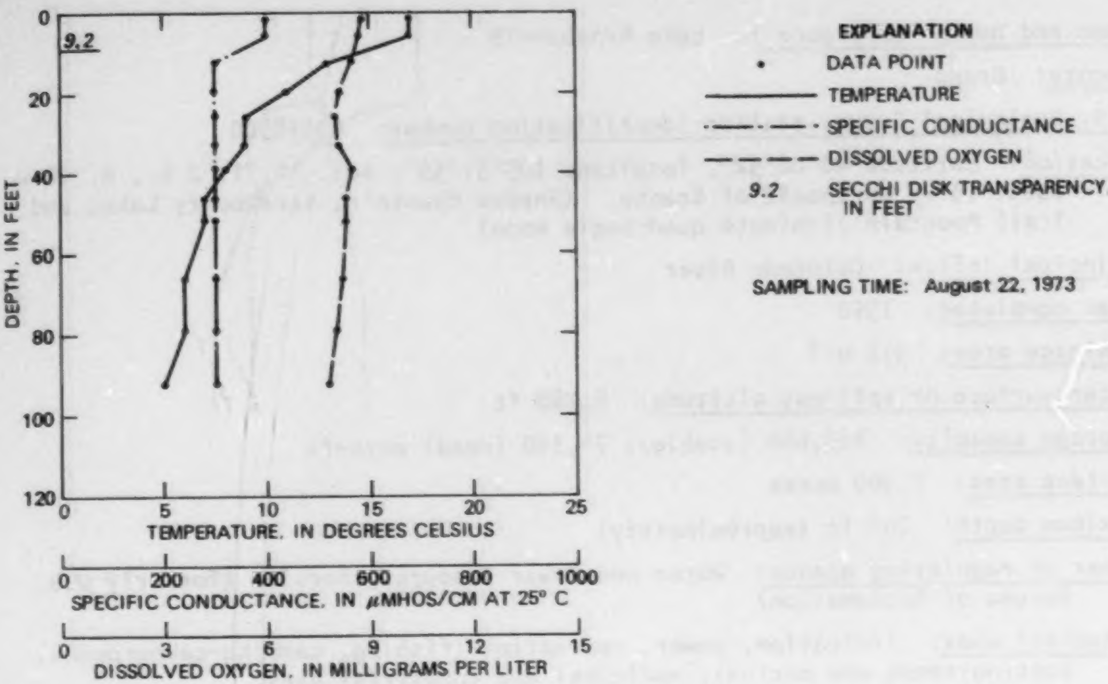
Surface area: 480 acres

Maximum depth: 250 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation)

Principal uses: Irrigation, power, recreation (fishing, camping-campgrounds, boating-ramps and marina), municipal and industrial uses.


105°52'30"
40°15'
Grand Lake
278
GRAND LAKE
34
Shadow Mountain Lake
Colorado River
0
1
2 MILES
0
1
2 KILOMETERS



SAMPLING TIME: August 22, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
22...	1.6	14	4.6	.7	1.8	.5	18	15	3.6	1.0	.1	4.9
22...	92	12	4.1	.5	1.4	.4	20	16	3.2	.4	.0	4.7

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN,AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
22...	26	.00	--	--	--	.01	.01	--	--	--	--	--
22...	25	.01	--	--	--	.02	.00	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
22...	--	--	80	--	10	--	--	--	--	--	--	6400
22...	--	--	200	--	10	--	--	--	--	--	--	--

Name and number on figure 1: Lake Granby--19

County: Grand

U.S. Geological Survey station-identification number: 09018500

Location: Latitude 40°08'52", longitude 105°51'55"; sec. 12, T. 2 N., R. 76 W.; about 10 mi northeast of Granby. (Shadow Mountain, Strawberry Lake, and Trail Mountain 7½-minute quadrangle maps)

Principal inflow: Colorado River

Year completed: 1950

Drainage area: 312 mi^2

Water-surface or spillway altitude: 8,280 ft

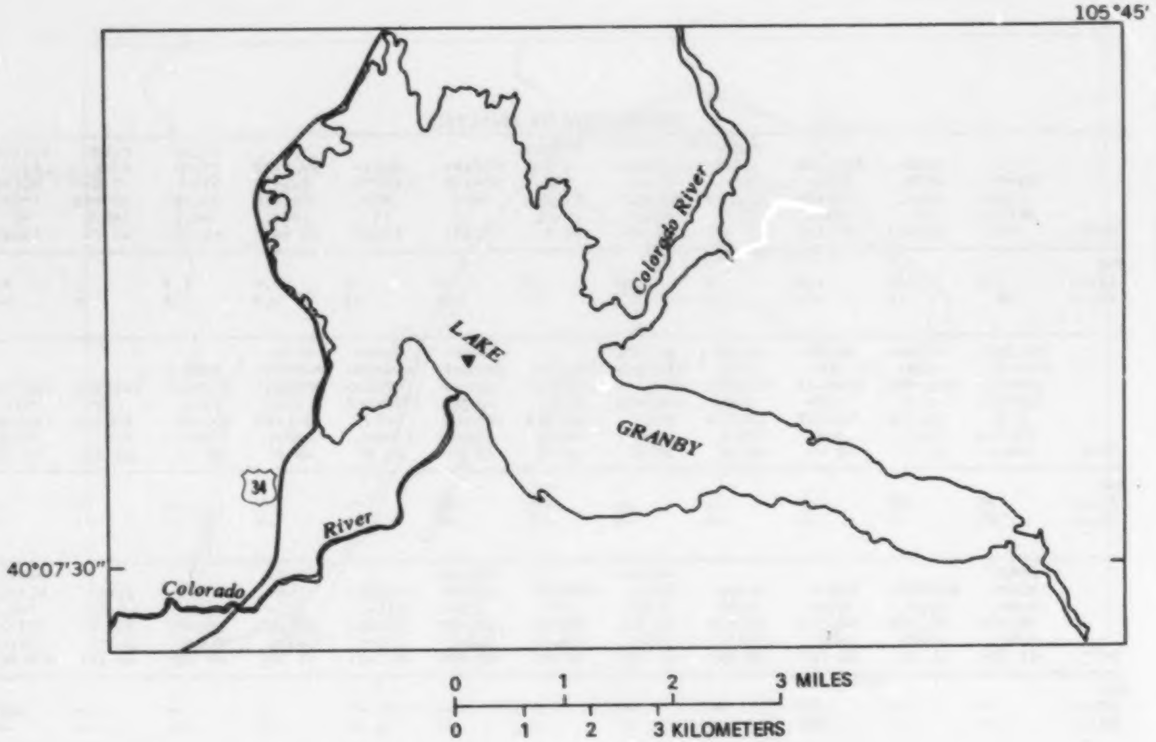
Storage capacity: 465,600 (usable); 74,190 (dead) acre-ft

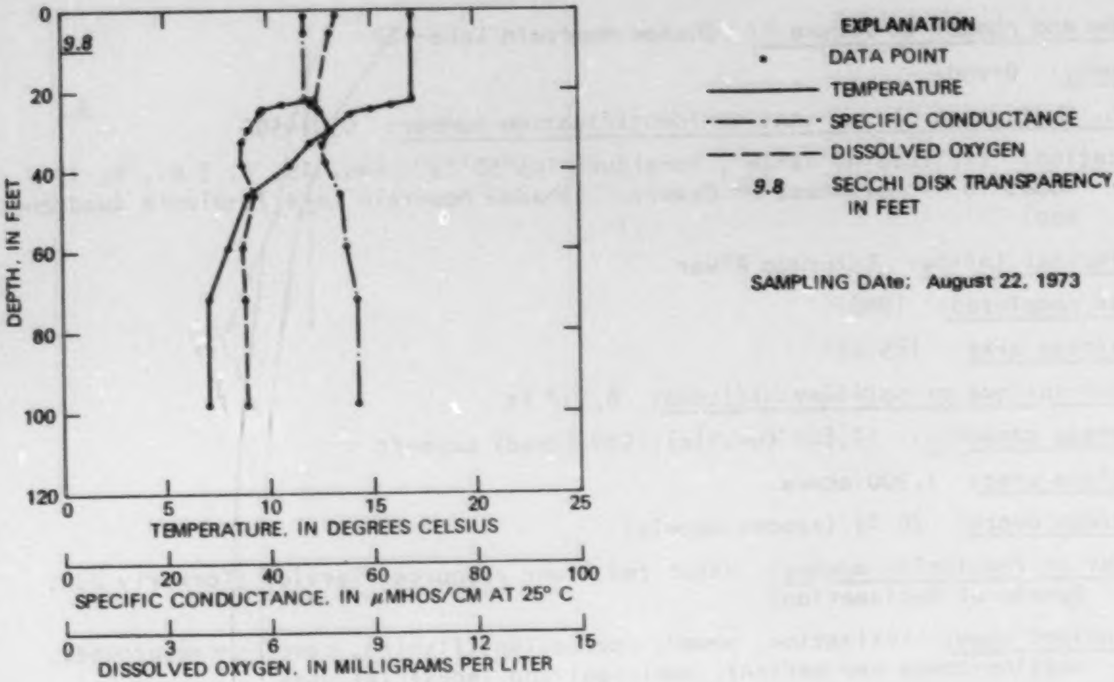
Surface area: 7,300 acres

Maximum depth: 200 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation)

Principal uses: Irrigation, power, recreation (fishing, camping-campgrounds, boating-ramps and marina), municipal and industrial uses.


105°45'
Colorado River
LAKE
GRANBY
34
River
40°07'30"
Colorado
0 1 2 3 MILES
0 1 2 3 KILOMETERS



SAMPLING DAte: August 22, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 22...	1.6	18	5.5	1.0	2.7	.7	29	24	4.1	.3	.0	2.5
22...	98	24	7.3	1.3	4.1	1.4	34	28	4.0	.6	.1	6.3

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 22...	33	.00	--	--	--	.01	.00	--	--	--	--	--
22...	45	.03	--	--	--	.02	.01	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 22...	--	--	2100	--	30	--	--	--	--	--	--	6600
22...	--	--	2500	--	40	--	--	--	--	--	--	--

Name and number on figure 1: Shadow Mountain Lake--20

County: Grand

U.S. Geological Survey station-identification number: 09014500

Location: Latitude 40°12'26", longitude 105°50'28"; sec. 19, T. 3 N., R. 75 W.; about 10 mi northeast of Granby. (Shadow Mountain Lake 7½-minute quadrangle map)

Principal inflow: Colorado River

Year completed: 1946

Drainage area: 185 mi^{2}

Water-surface or spillway altitude: 8,367 ft

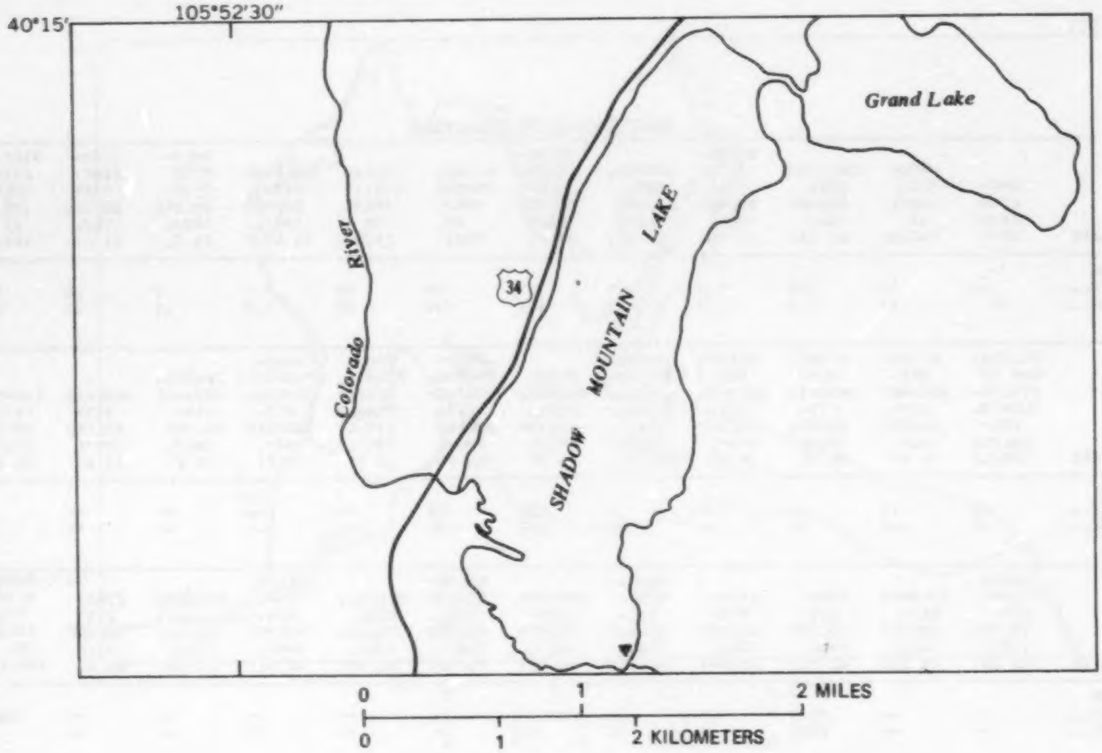
Storage capacity: 17,860 (usable); 500 (dead) acre-ft

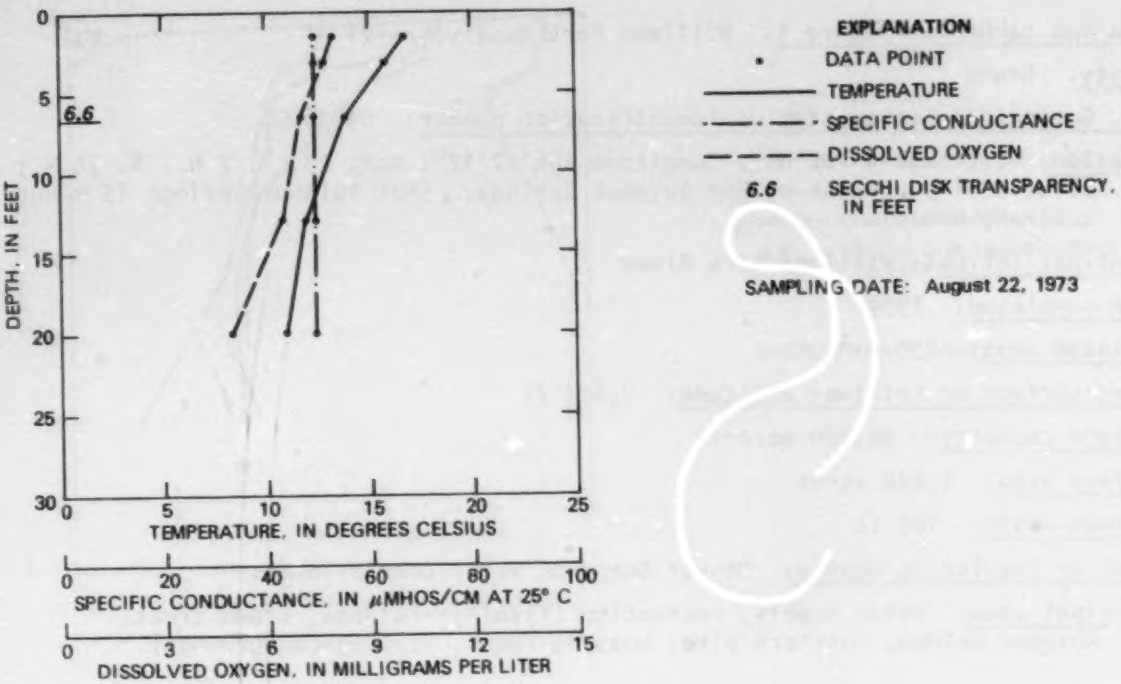
Surface area: 1,900 acres

Maximum depth: 20 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation)

Principal uses: Irrigation, power, recreation (fishing, camping-campgrounds, boating-ramps and marina), municipal and industrial uses.


40°15'
105°52'30"
Grand Lake
Colorado River
34
SHADOW MOUNTAIN LAKE
0
1
2 MILES
0
1
2 KILOMETERS



SAMPLING DATE: August 22, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
22...	1.6	22	6.8	1.3	3.1	.8	31	25	3.8	.4	.2	6.2
22...	20	22	6.8	1.3	2.8	.7	28	23	3.4	1.0	.1	6.1

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
22...	39	.02	--	--	--	.01	.01	--	--	--	--	--
22...	37	.13	--	--	--	.03	.04	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
22...	--	--	1000	--	0	--	--	--	--	--	--	650
22...	--	--	230	--	45	--	--	--	--	--	--	--

Name and number on figure 1: Williams Fork Reservoir--21

County: Grand

U.S. Geological Survey station-identification number: 09038000

Location: Latitude 40°02'06", longitude 106°12'17"; sec. 23, T. 2 N., R. 76 W.; about 6 mi southwest of Hot Sulphur Springs. (Hot Sulphur Springs 15-minute quadrangle map)

Principal inflow: Williams Fork River

Year completed: 1959

Drainage area: 230 mi^2

Water-surface or spillway altitude: 7,803 ft

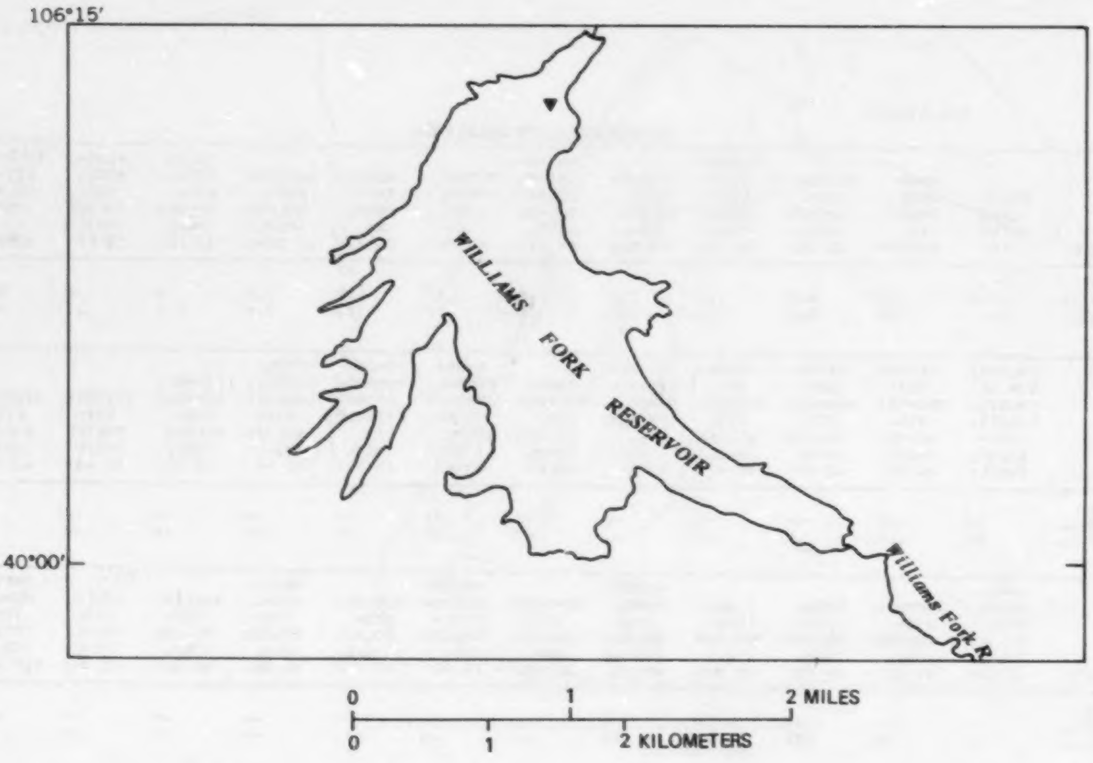
Storage capacity: 96,820 acre-ft

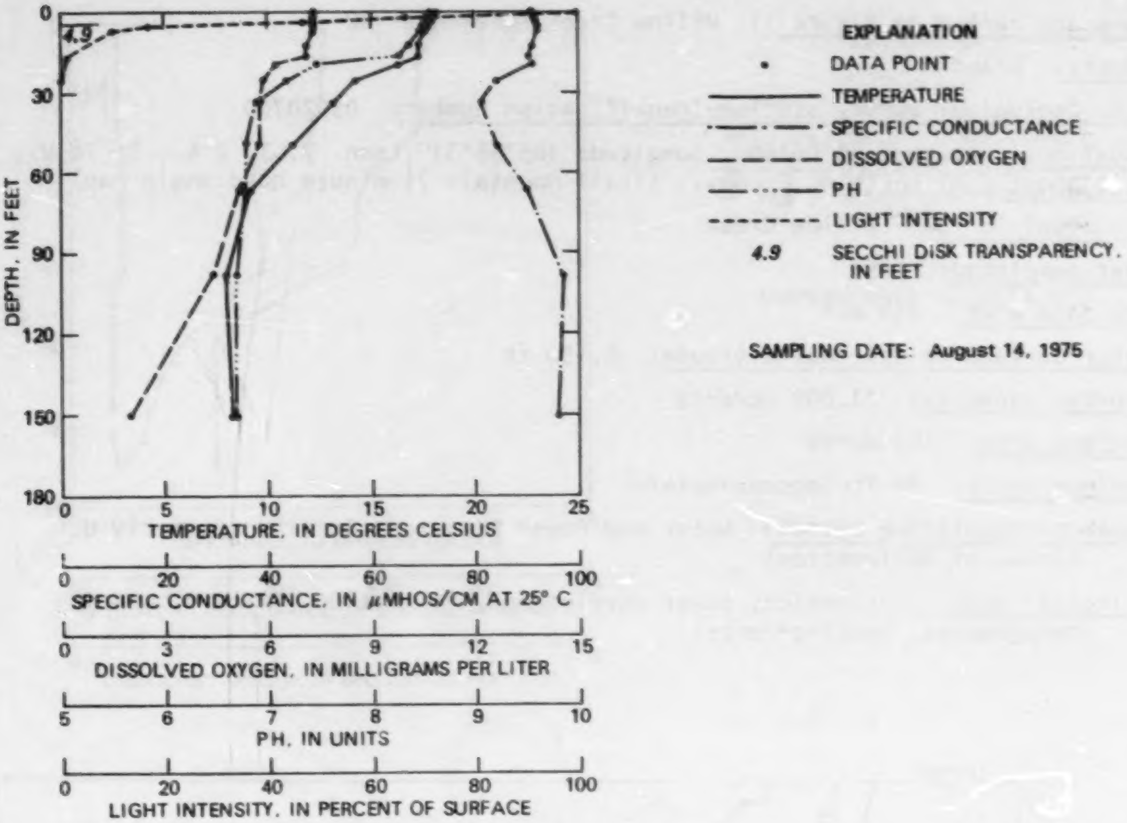
Surface area: 1,620 acres

Maximum depth: 169 ft

Owner or regulating agency: Denver Board of Water Commissioners

Principal uses: Water supply, recreation (fishing--rainbow, brown trout, kokanee salmon, northern pike; boating-ramps, camping-campgrounds).


106°15'
40°00'
WILLIAMS FORK RESERVOIR
Williams Fork R
0
1
2 MILES
0
1
2 KILOMETERS



SAMPLING DATE: August 14, 1975

WATER-QUALITY ANALYSIS

DATE	SAMP-LING DEPTH (FT)	HARD-NESS (MG/L AS CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	ALKA-LINITY (MG/L AS CACO3)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	SILICA, DIS-SOLVED (MG/L AS SIO2)
AUG												
14...	1.6	54	18	2.3	2.6	1.3	58	48	5.7	1.0	.3	6.7
14...	151	55	18	2.5	2.8	1.3	61	50	4.8	1.3	.3	9.3

DATE	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 DIS-SOLVED (MG/L AS N)	NITRO-GEN, AMMONIA DIS-SOLVED (MG/L AS N)	NITRO-GEN, ORGANIC DIS-SOLVED (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC DIS. (MG/L AS N)	PHOS-PHORUS, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, ORTHO, DIS-SOLVED (MG/L AS P)	PHOS-PHORUS, HYDRO-LYZABLE DIS. (MG/L AS P)	PHOS-PHORUS, ORGANIC DIS-SOLVED (MG/L AS P)	CARBON, ORGANIC DIS-SOLVED (MG/L AS C)	ARSENIC DIS-SOLVED (UG/L AS AS)	CADMIUM DIS-SOLVED (UG/L AS CD)
AUG												
14...	67	.01	.00	.30	.30	.02	.01	.01	.00	4.7	--	--
14...	71	.15	.01	.13	.14	.02	.01	.00	.01	3.8	--	--

DATE	CHRO-MIUM, DIS-SOLVED (UG/L AS CR)	COPPER, DIS-SOLVED (UG/L AS CU)	IRON, DIS-SOLVED (UG/L AS FE)	LEAD, DIS-SOLVED (UG/L AS PB)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	MERCURY DIS-SOLVED (UG/L AS HG)	MOLYB-DENUM, DIS-SOLVED (UG/L AS MO)	NICKEL, DIS-SOLVED (UG/L AS NI)	SELE-NIUM, DIS-SOLVED (UG/L AS SE)	SILVER, DIS-SOLVED (UG/L AS AG)	ZINC, DIS-SOLVED (UG/L AS ZN)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)
AUG												
14...	--	--	20	--	0	--	--	--	--	--	--	40000
14...	--	--	50	--	100	--	--	--	--	--	--	--

Name and number on figure 1: Willow Creek Reservoir--22

County: Grand

U.S. Geological Survey station-identification number: 09020700

Location: Latitude 40°08'50", longitude 105°56'31"; sec. 7, T. 2 N., R. 76 W.; about 4 mi north of Granby. (Trail Mountain 7½-minute quadrangle map)

Principal inflow: Willow Creek

Year completed: 1953

Drainage area: 134 mi^2

Water-surface or spillway altitude: 8,130 ft

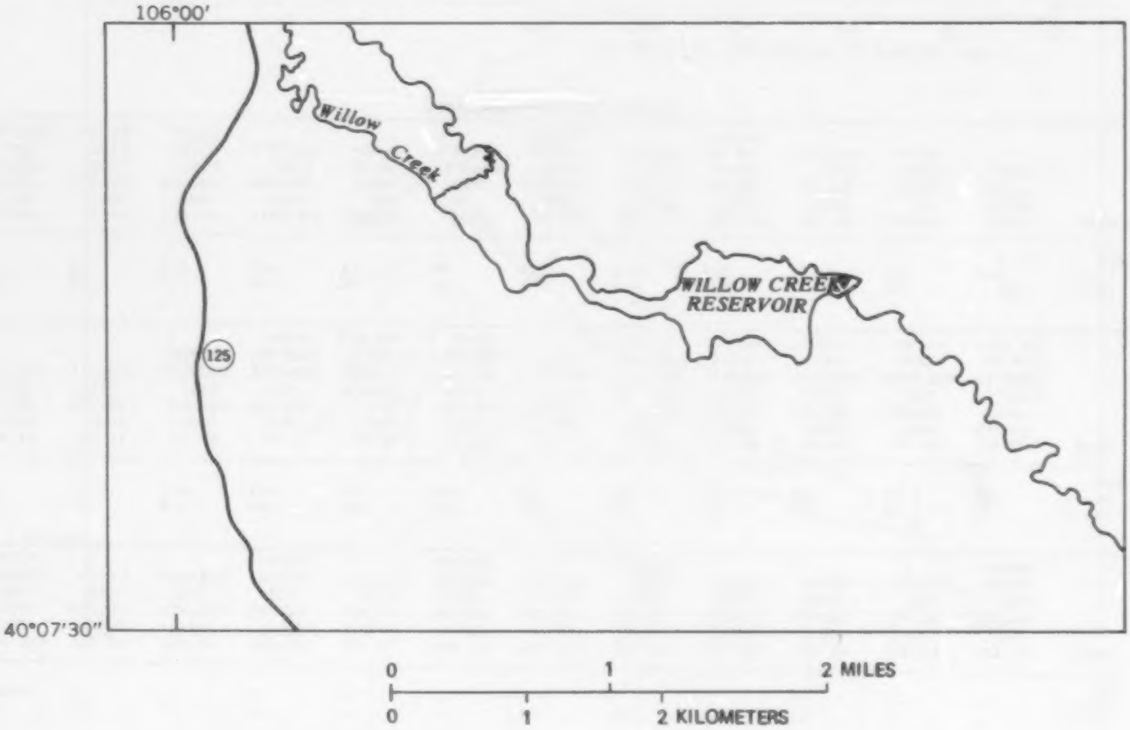
Storage capacity: 11,000 acre-ft

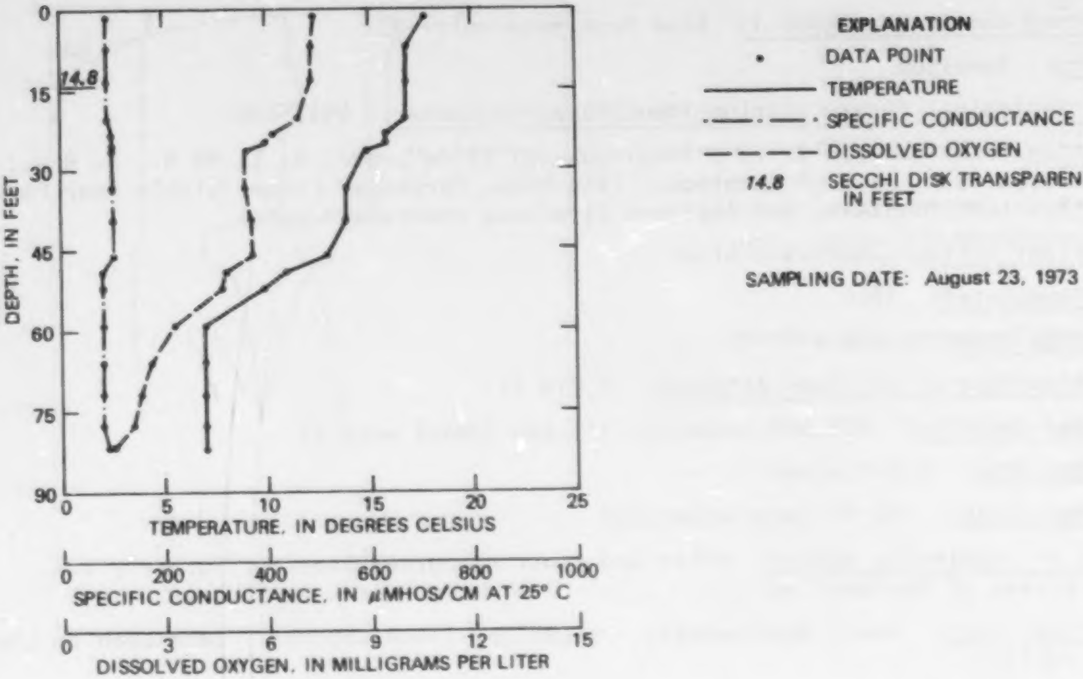
Surface area: 300 acres

Maximum depth: 85 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation)

Principal uses: Irrigation, power development, recreation (fishing, camping-campgrounds, boating-ramps).


106°00'
Willow Creek
WILLOW CREEK RESERVOIR
125
40°07'30"
0
1
2 MILES
0
1
2 KILOMETERS



SAMPLING DATE: August 23, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
23...	1.6	40	12	2.4	5.2	.6	56	46	6.2	.3	.2	12
23...	82	37	11	2.2	4.7	.7	47	39	5.4	.4	.1	13

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
23...	67	.01	--	--	--	.01	.02	--	--	--	--	--
23...	61	.02	--	--	--	.02	.02	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
23...	--	--	380	--	0	--	--	--	--	--	--	1800
23...	--	--	370	--	250	--	--	--	--	--	--	--

Name and number on figure 1: Blue Mesa Reservoir--23

County: Gunnison

U.S. Geological Survey station-identification number: 09124600

Location: Latitude 38°27'13", longitude 107°20'00"; sec. 4, T. 48 N., R. 4 W.; about 25 mi west of Gunnison. (Big Mesa, Carpenter Ridge, Little Soap Park, McIntosh Mountain, and Sapinero 7½-minute quadrangle maps)

Principal inflow: Gunnison River

Year completed: 1966

Drainage area: 3,426 mi^2

Water-surface or spillway altitude: 7,519 ft

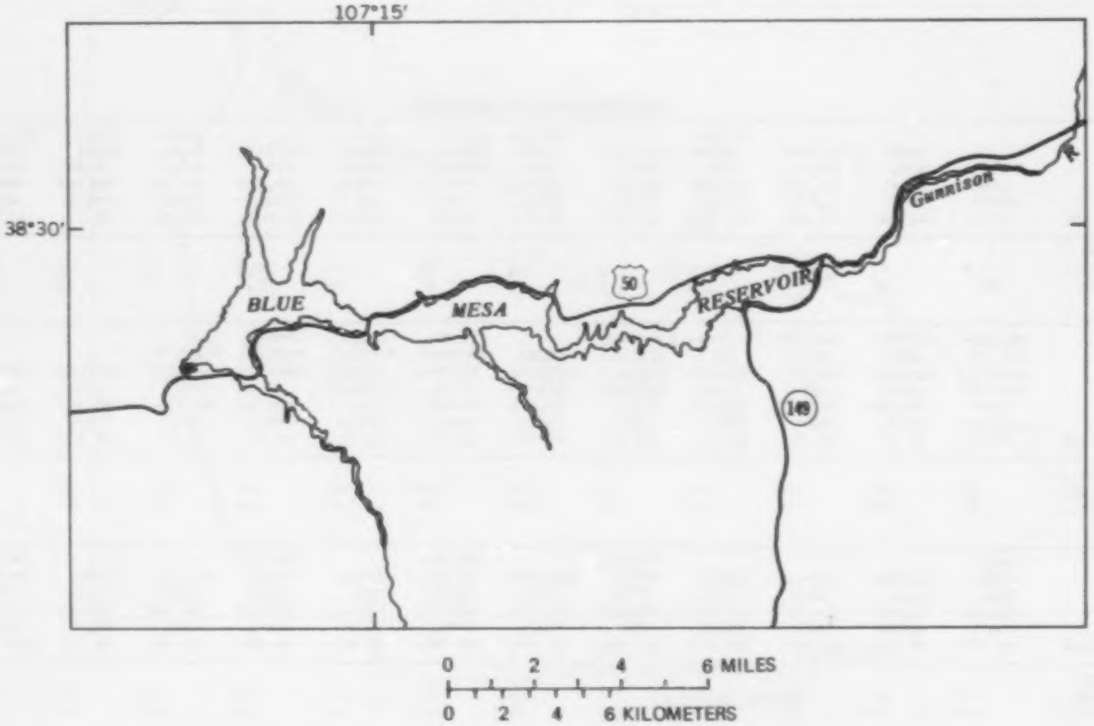
Storage capacity: 829,600 (usable); 111,200 (dead) acre-ft

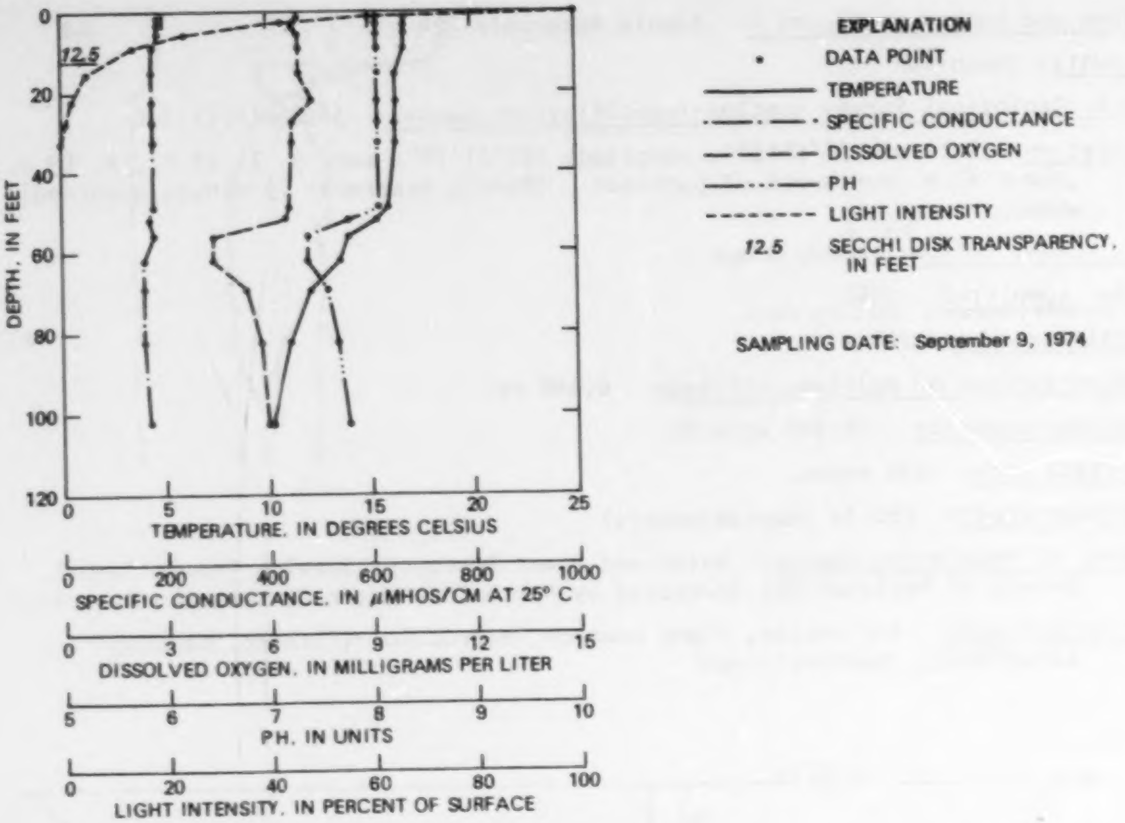
Surface area: 9,200 acres

Maximum depth: 100 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation)

Principal uses: Power development, irrigation, flood control. (Not open to the public).





SAMPLING DATE: September 9, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 09...	1.6	90	28	4.8	4.9	1.2	93	76	16	1.3	.2	10
09...	102	80	25	4.3	5.4	1.3	87	71	16	2.0	.2	12

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 09...	112	.00	--	--	--	.01	.01	--	--	--	--	--
09...	110	.10	--	--	--	.02	.01	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 09...	--	--	50	--	0	--	--	--	--	--	--	760
09...	--	--	20	--	0	--	--	--	--	--	--	--

Name and number on figure 1: Paonia Reservoir--24

County: Gunnison

U.S. Geological Survey station-identification number: 385654107211800

Location: Latitude 38°56'54", longitude 107°21'18"; sec. 9, T. 13 S., R. 89 W.; about 45 mi northwest of Gunnison. (Paonia Reservoir 7½-minute quadrangle map)

Principal inflow: Muddy Creek

Year completed: 1962

Drainage area: 260 mi^2

Water-surface or spillway altitude: 6,448 ft

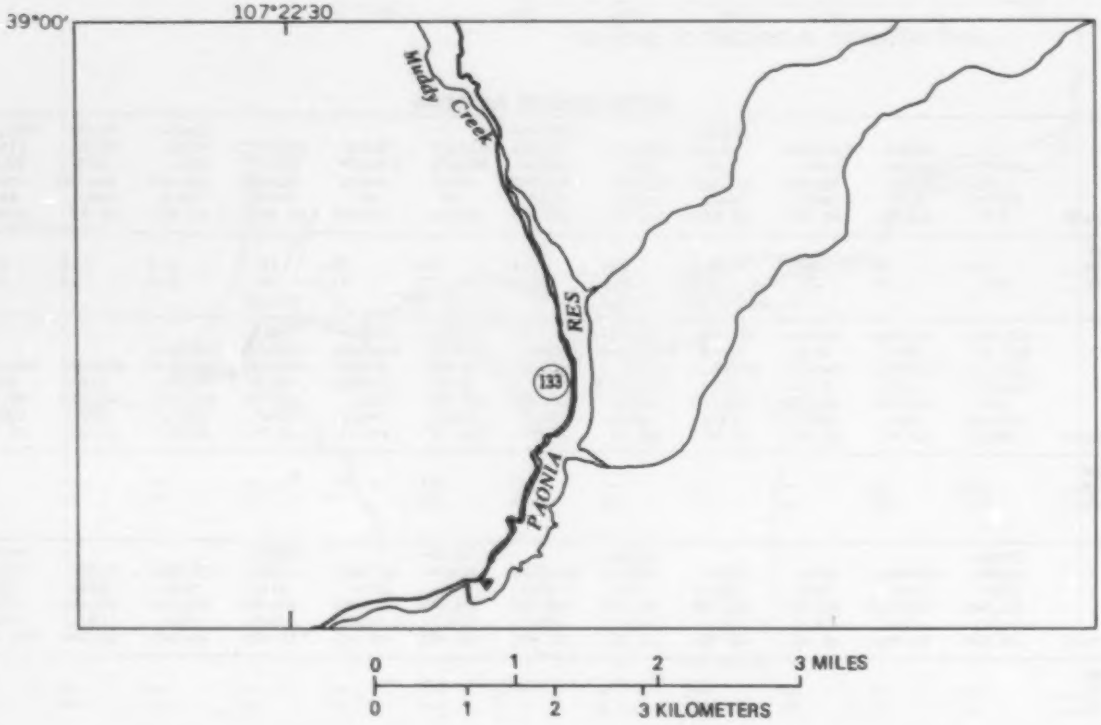
Storage capacity: 18,300 acre-ft

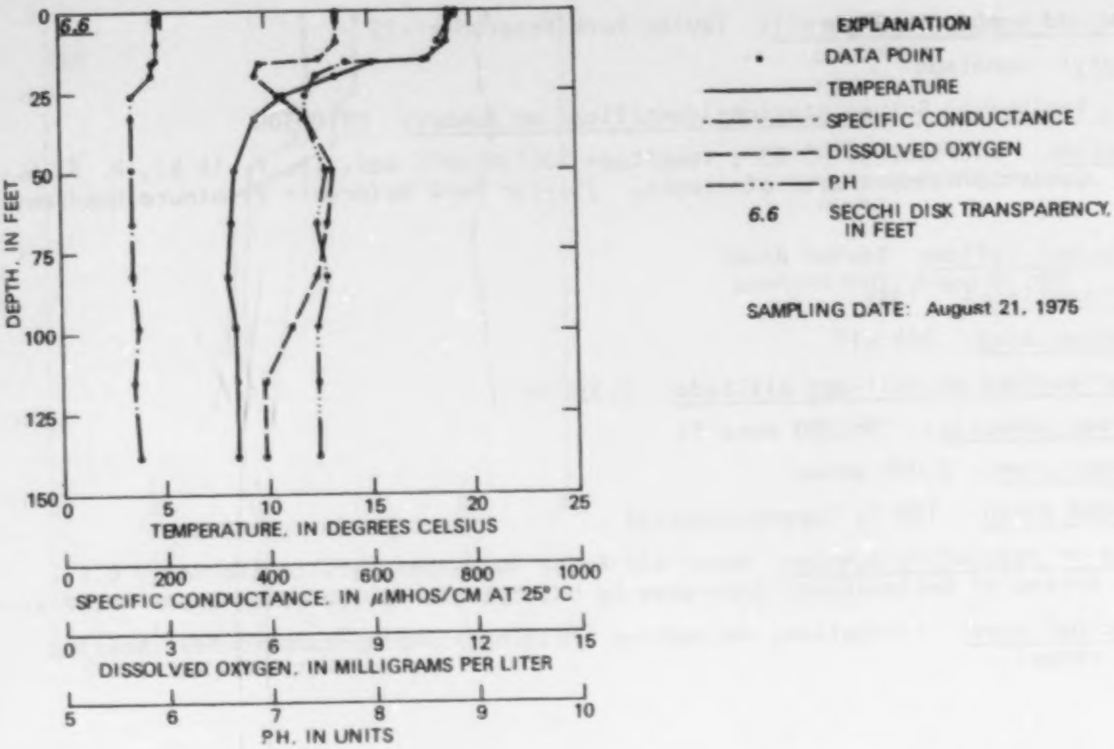
Surface area: 330 acres

Maximum depth: 150 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation) (operated by North Fork Water Conservancy District)

Principal uses: Irrigation, flood control, recreation (fishing, camping-campgrounds, boating-ramps).





WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
21...	1.6	88	28	4.4	7.9	1.3	107	103	14	1.4	.2	10
21...	138	83	27	3.8	6.1	1.1	101	83	4.3	1.1	.3	9.3

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
21...	129	.05	.17	.00	.16	.01	.00	.02	.00	4.6	--	--
21...	104	.14	.00	.12	.12	.02	.03	.01	.00	5.6	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
21...	--	--	10	--	0	--	--	--	--	--	--	2300
21...	--	--	30	--	20	--	--	--	--	--	--	--

Name and number on figure 1: Taylor Park Reservoir--25

County: Gunnison

U.S. Geological Survey station-identification number: 09108500

Location: Latitude 38°49'03", longitude 106°36'16"; sec. 13, T. 14 S., R. 82 W.; about 16 mi northeast of Almont. (Taylor Park Reservoir 7½-minute quadrangle map)

Principal inflow: Taylor River

Year completed: 1937

Drainage area: 254 mi^2

Water-surface or spillway altitude: 9,330 ft

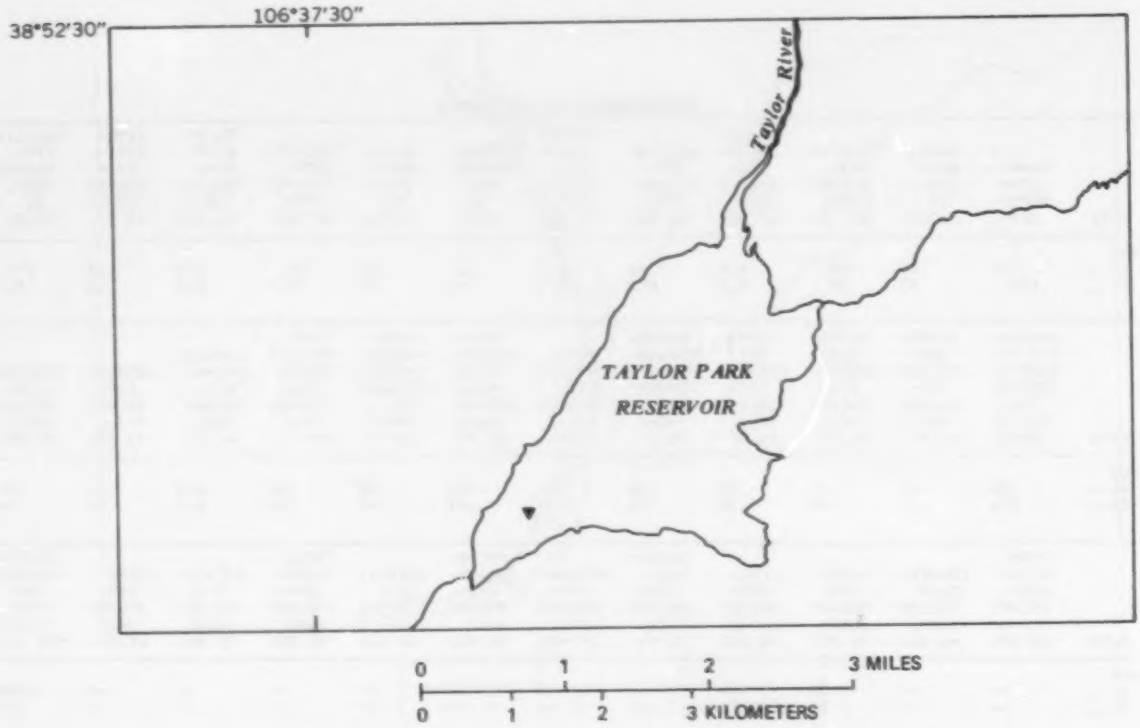
Storage capacity: 106,200 acre-ft

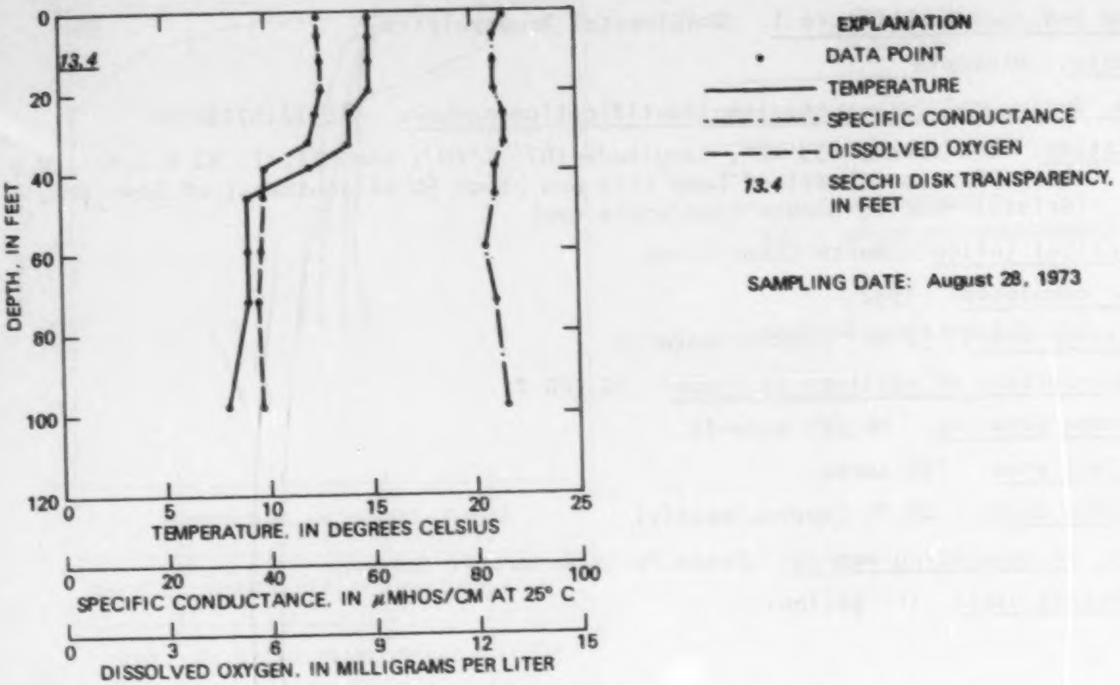
Surface area: 2,000 acres

Maximum depth: 100 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation) (operated by Uncompahgre Valley Water Users Association)

Principal uses: Irrigation, recreation (fishing, camping-campgrounds, boating-ramps).





SAMPLING DATE: August 28, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
28...	1.6	40	12	2.4	2.2	.5	45	37	6.4	.3	.1	6.6
28...	98	41	12	2.7	2.9	.7	52	43	6.3	.1	.2	7.5

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
28...	53	.00	--	--	--	.01	.01	--	--	--	--	--
28...	58	.03	--	--	--	.01	.01	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
28...	--	--	70	--	10	--	--	--	--	--	--	1500
28...	--	--	280	--	0	--	--	--	--	--	--	--

Name and number on figure 1: Continental Reservoir--26

County: Hinsdale

U.S. Geological Survey station-identification number: 375312107122000

Location: Latitude 37°53'12", longitude 107°12'20"; sec. 21, T. 42 N., R. 3 W.; about 12 mi southwest of Lake City and about 50 mi southwest of Gunnison. (Bristol Head 15-minute quadrangle map)

Principal inflow: North Clear Creek

Year completed: 1932

Drainage area: 50 mi^2 (approximately)

Water-surface or spillway altitude: 10,200 ft

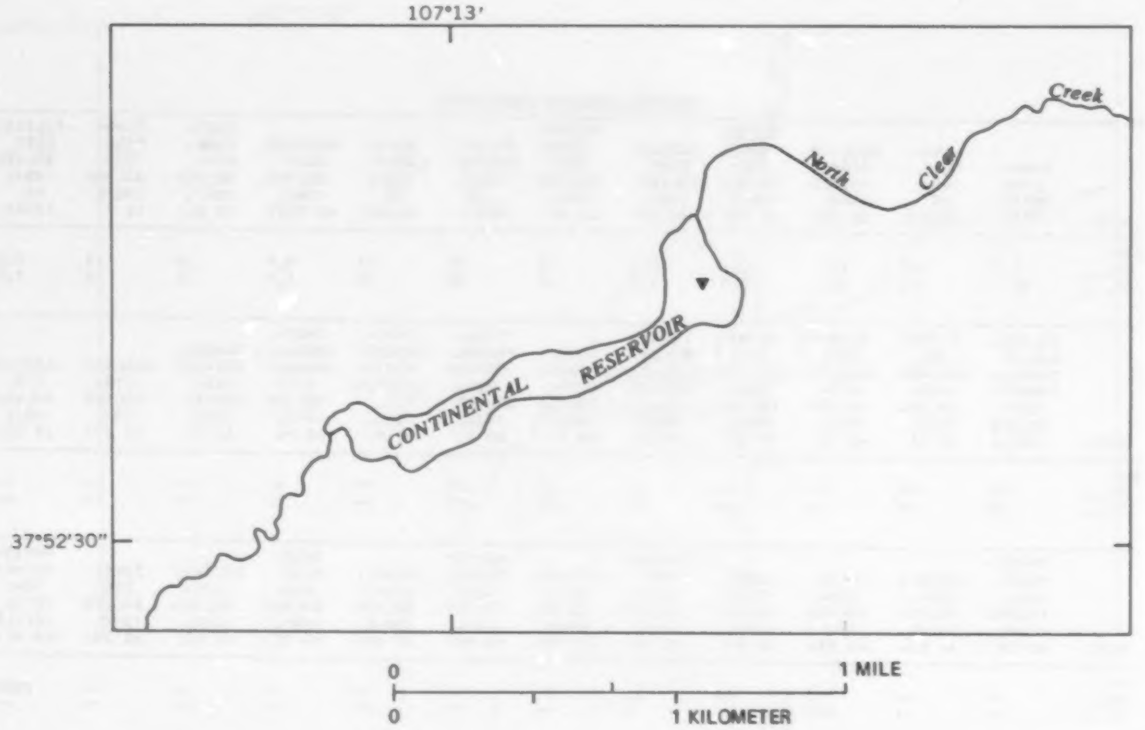
Storage capacity: 26,720 acre-ft

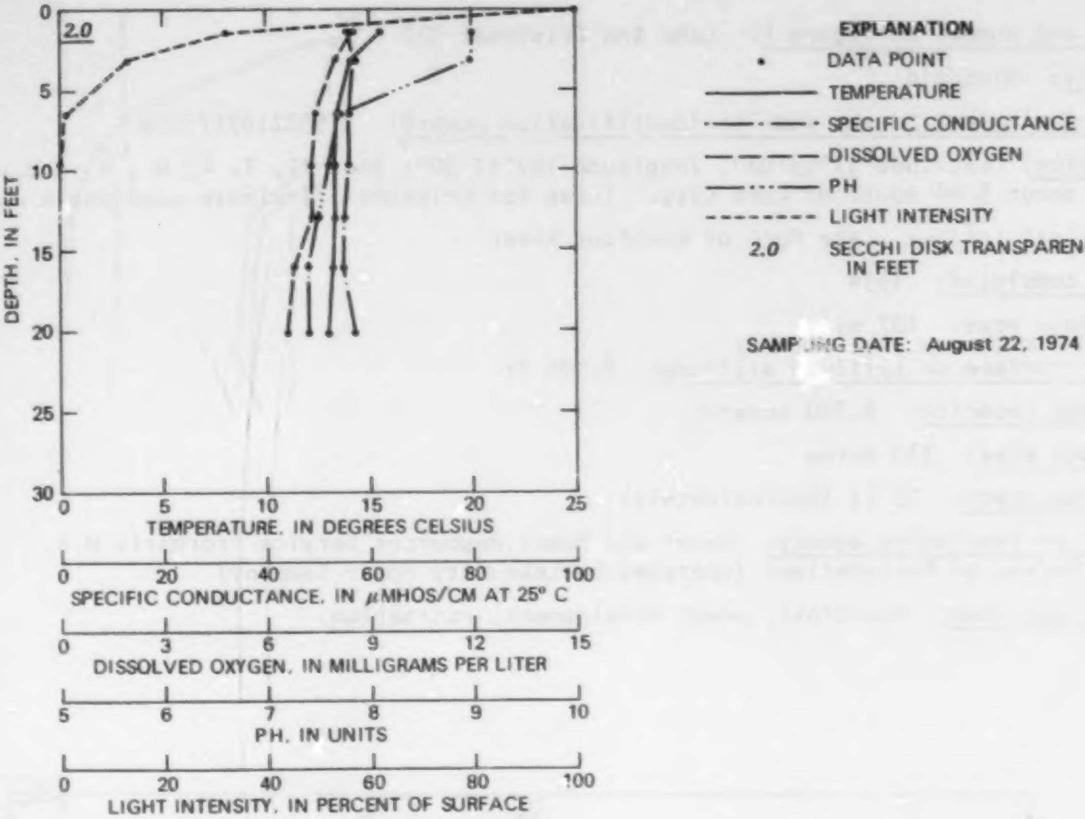
Surface area: 770 acres

Maximum depth: 20 ft (approximately)

Owner or regulating agency: Santa Maria Reservoir Company

Principal uses: Irrigation.


107°13′
North Clear Creek
CONTINENTAL RESERVOIR
37°52′30″
0
1 MILE
0
1 KILOMETER



SAMPLING DATE: August 22, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
22...	1.6	20	6.7	.7	3.0	1.8	34	28	2.1	.7	.1	6.3
22...	20	26	8.8	1.0	2.7	1.8	34	28	2.1	.6	.1	6.4

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
22...	39	.01	.02	.26	.28	.04	.01	.03	.00	18	--	--
22...	41	.00	.01	.43	.44	.04	.01	.01	.02	7.0	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
22...	--	--	320	--	20	--	--	--	--	--	--	55000
22...	--	--	320	--	50	--	--	--	--	--	--	--

Name and number on figure 1: Lake San Cristobal--27

County: Hinsdale

U.S. Geological Survey station-identification number: 375902107173000

Location: Latitude 37°59'02", longitude 107°17'30"; sec. 22, T. 43 N., R. 4 W.; about 5 mi south of Lake City. (Lake San Cristobal 7½-minute quadrangle map)

Principal inflow: Lake Fork of Gunnison River

Year completed: 1954

Drainage area: 107 mi^2

Water-surface or spillway altitude: 8,995 ft

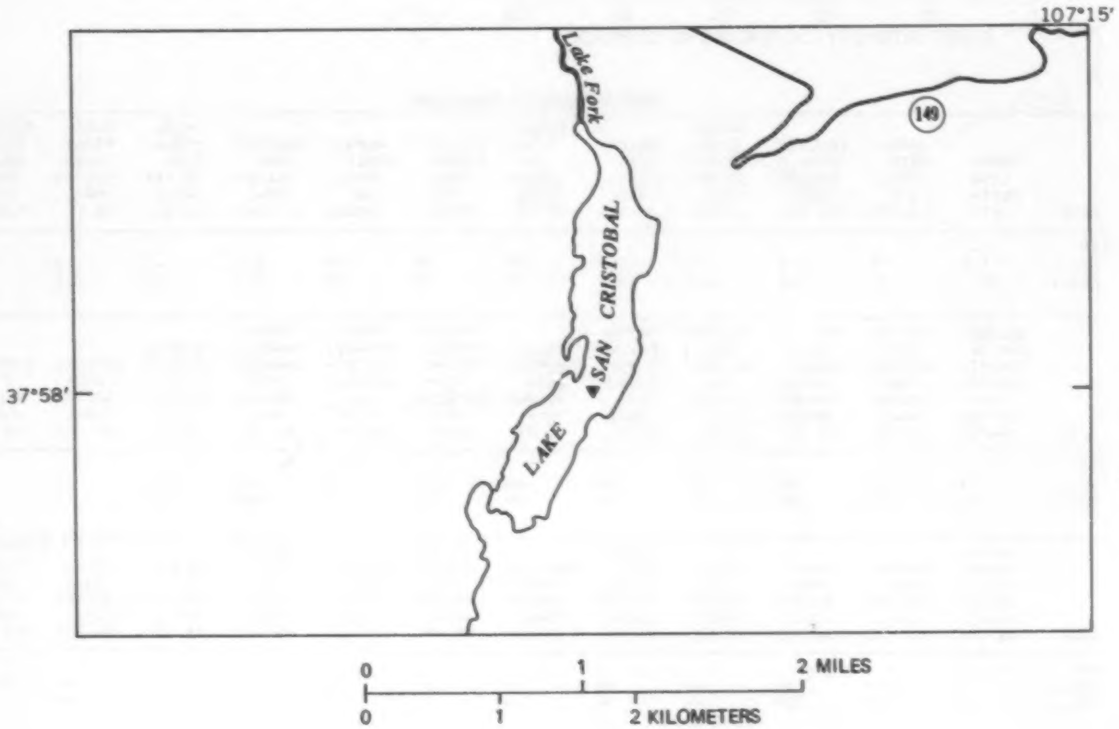
Storage capacity: 9,780 acre-ft

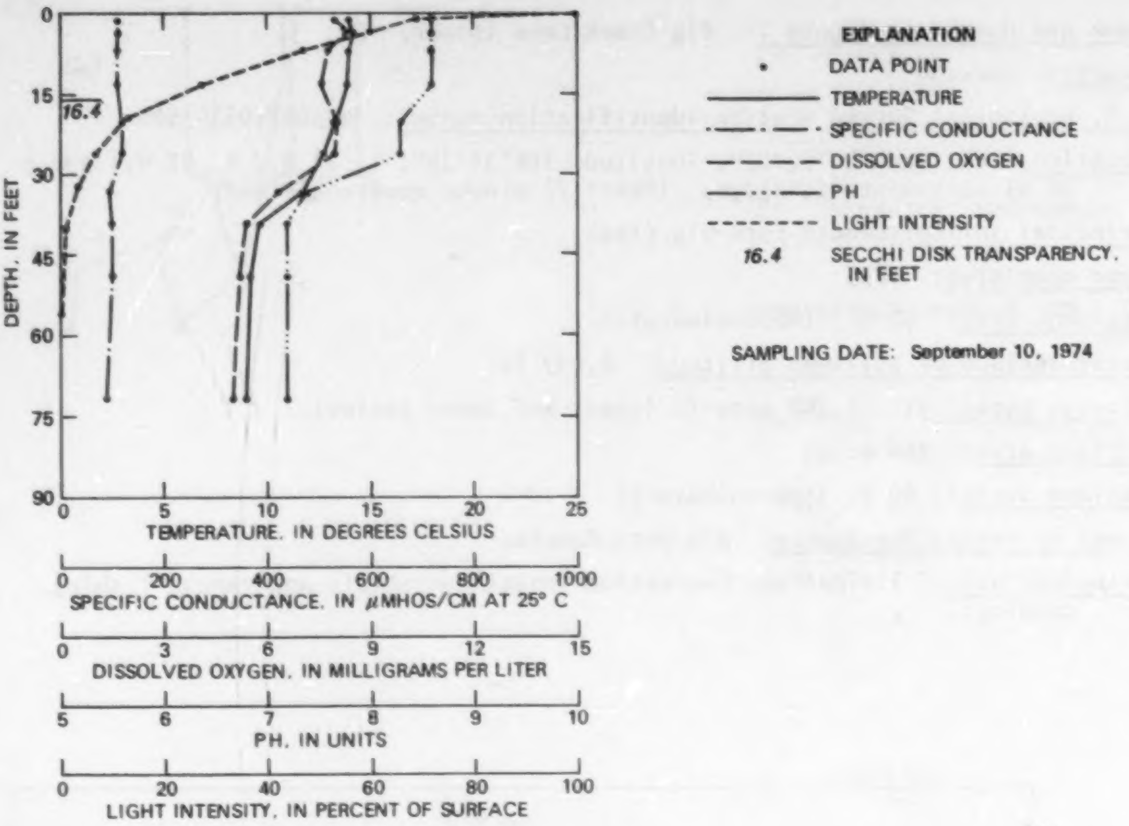
Surface area: 330 acres

Maximum depth: 75 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation) (operated by Lake City Power Company)

Principal uses: Municipal, power development, recreation.





WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
10...	1.6	51	16	2.6	2.8	.7	36	30	24	.7	.2	7.3
10...	72	37	13	1.2	1.7	.7	31	25	17	.3	.2	6.3

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
10...	72	.07	.01	.19	.20	.03	.00	.00	.03	16	--	1
10...	56	.06	.01	.18	.19	.02	.00	.00	.02	8.0	--	1

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
10...	--	2	80	2	0	--	--	2	--	--	20	710
10...	--	1	60	2	40	--	--	6	--	--	20	--

Name and number on figure 1: Big Creek Lake (Lower)--28

County: Jackson

U.S. Geological Survey station-identification number: 405607106363500

Location: Latitude 40°56'07", longitude 106°36'35"; T. 11 N., R. 82 W.; about 20 mi northwest of Walden. (Pearl 7½-minute quadrangle map)

Principal inflow: South Fork Big Creek

Year completed: 1895

Drainage area: 50 mi^2 (approximately)

Water-surface or spillway altitude: 8,997 ft

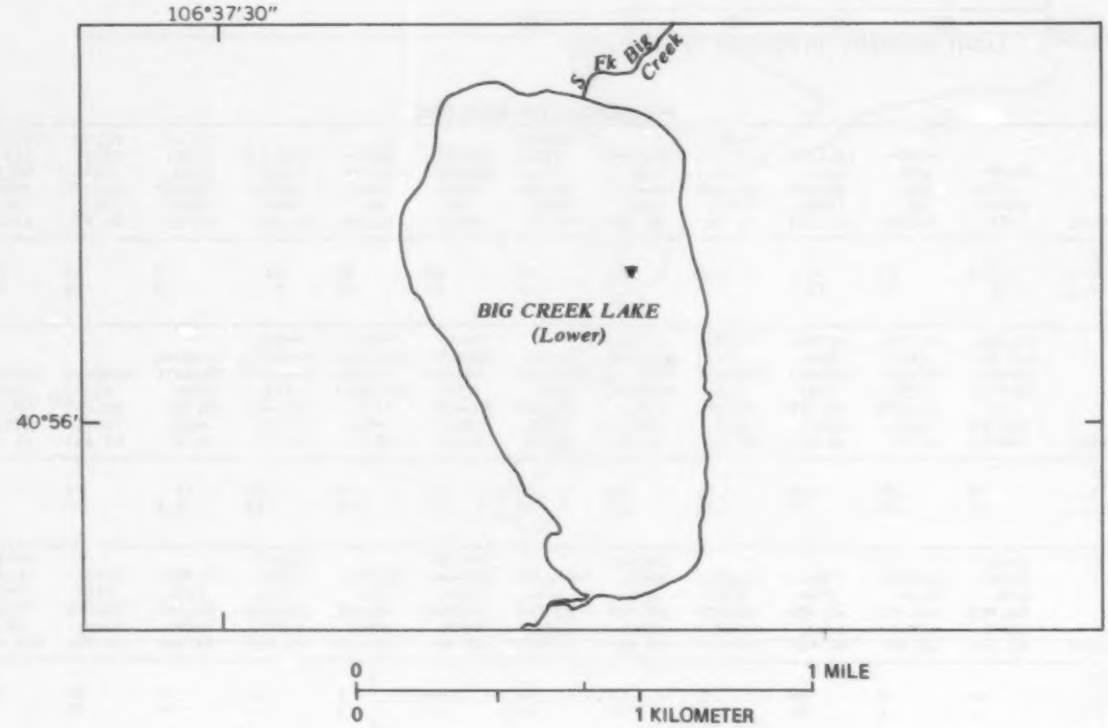
Storage capacity: 13,760 acre-ft (upper and lower basins)

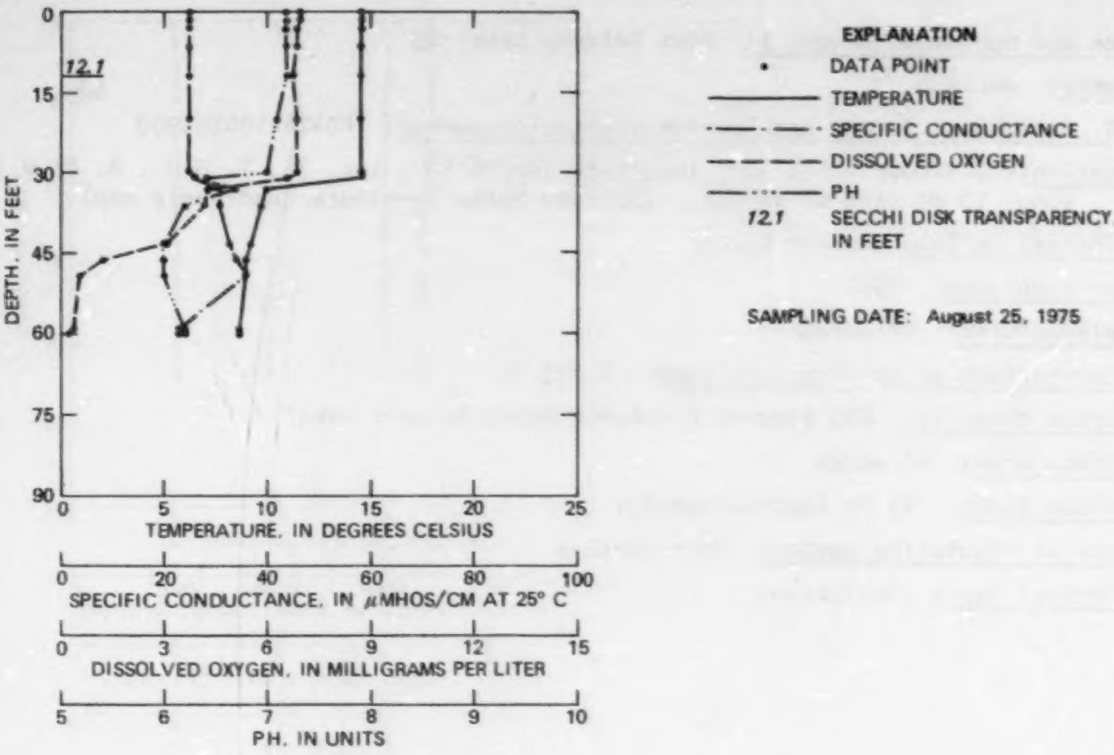
Surface area: 350 acres

Maximum depth: 60 ft (approximately)

Owner or regulating agency: Big Horn Ranches

Principal uses: Irrigation, recreation (boating--rentals and ramps, fishing, camping).





SAMPLING DATE: August 25, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
25...	1.6	11	4.0	.3	1.1	.6	15	12	2.2	.6	.1	3.8
25...	60	17	5.8	.5	1.3	.8	19	16	2.3	.7	.1	6.1

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
25...	20	.00	.00	.19	.19	.04	.00	.01	.03	4.6	--	--
25...	28	.00	.00	.21	.21	.01	.00	.00	.01	5.8	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
25...	--	--	60	--	10	--	--	--	--	--	--	540
25...	--	--	450	--	230	--	--	--	--	--	--	--

Name and number on figure 1: East Delaney Lake--29

County: Jackson

U.S. Geological Survey station-identification number: 404242106265900

Location: Latitude 40°42'42", longitude 106°26'59"; sec. 36, T. 9 N., R. 81 W.; about 10 mi west of Walden. (Delaney Butte 7½-minute quadrangle map)

Principal inflow: Wolfer Ditch

Year completed: 1971

Drainage area: Offstream

Water-surface or spillway altitude: 8,113 ft

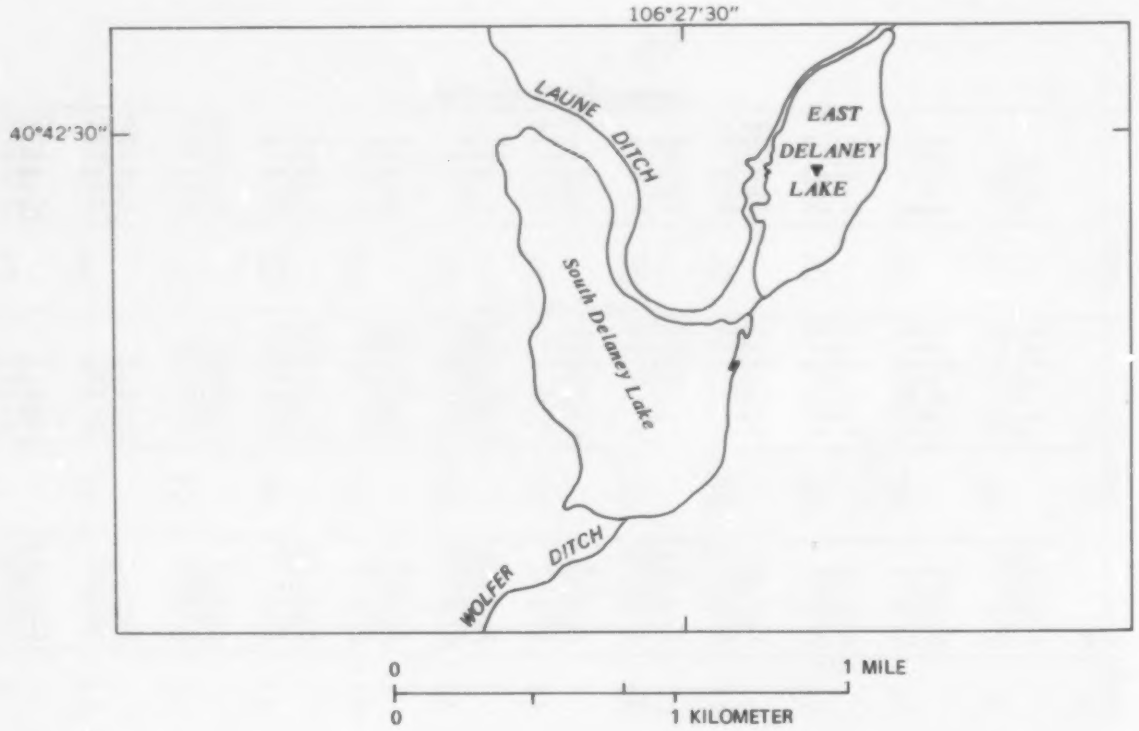
Storage capacity: 850 acre-ft (includes South Delaney Lake)

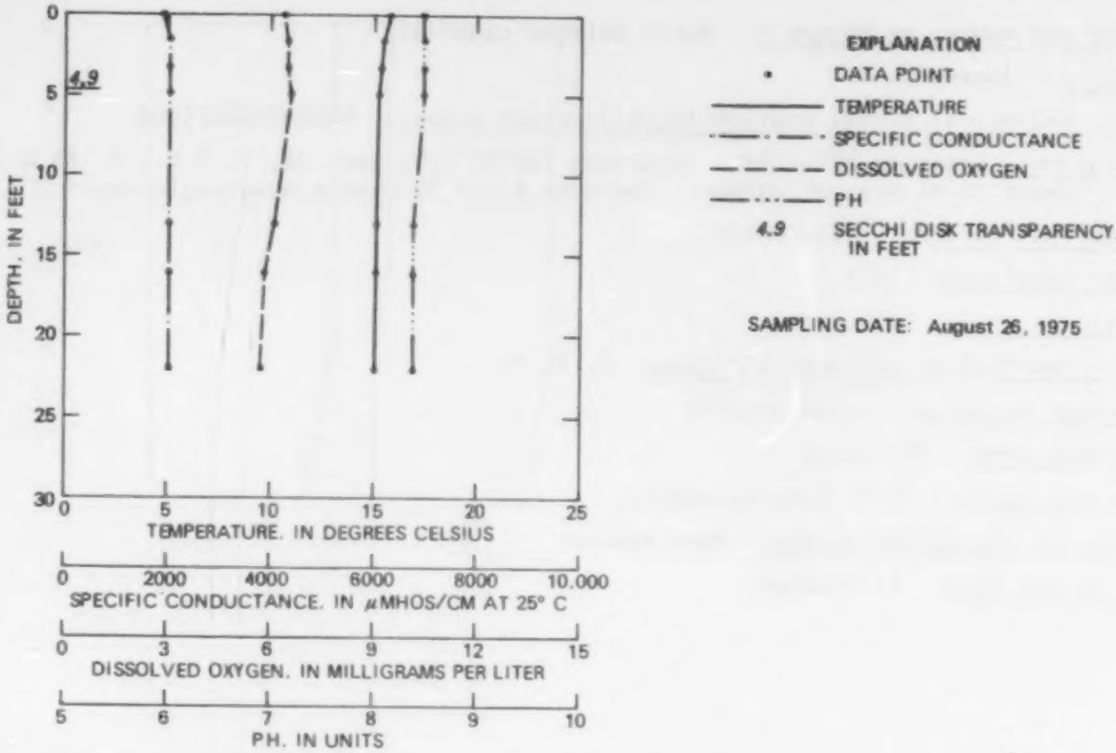
Surface area: 66 acres

Maximum depth: 25 ft (approximately)

Owner or regulating agency: Horn Ranches

Principal uses: Irrigation.


106°27'30"
40°42'30"
LAUNE DITCH
EAST DELANEY LAKE
South Delaney Lake
WOLFER DITCH
0
1 MILE
0
1 KILOMETER



SAMPLING DATE: August 26, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
26...	1.6	730	96	120	200	12	117	116	950	32	2.0	.1
26...	22	710	88	120	200	12	142	116	950	32	1.9	.2

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
26...	1480	.00	.00	.38	.38	.01	.00	.00	.01	8.6	--	--
26...	1470	.00	.00	.81	.81	.01	.00	.00	.01	12	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
26...	--	--	10	--	60	--	--	--	--	--	--	1600
26...	--	--	0	--	60	--	--	--	--	--	--	--

Name and number on figure 1: North Delaney Lake--30

County: Jackson

U.S. Geological Survey station-identification number: 404245106275900

Location: Latitude 40°42'45", longitude 106°27'59"; sec. 26, T. 9 N., R. 81 W.; about 10 mi west of Walden. (Delaney Butte 7½-minute quadrangle map)

Principal inflow: Laune Ditch

Year completed: 1971

Drainage area: Offstream

Water-surface or spillway altitude: 8,145 ft

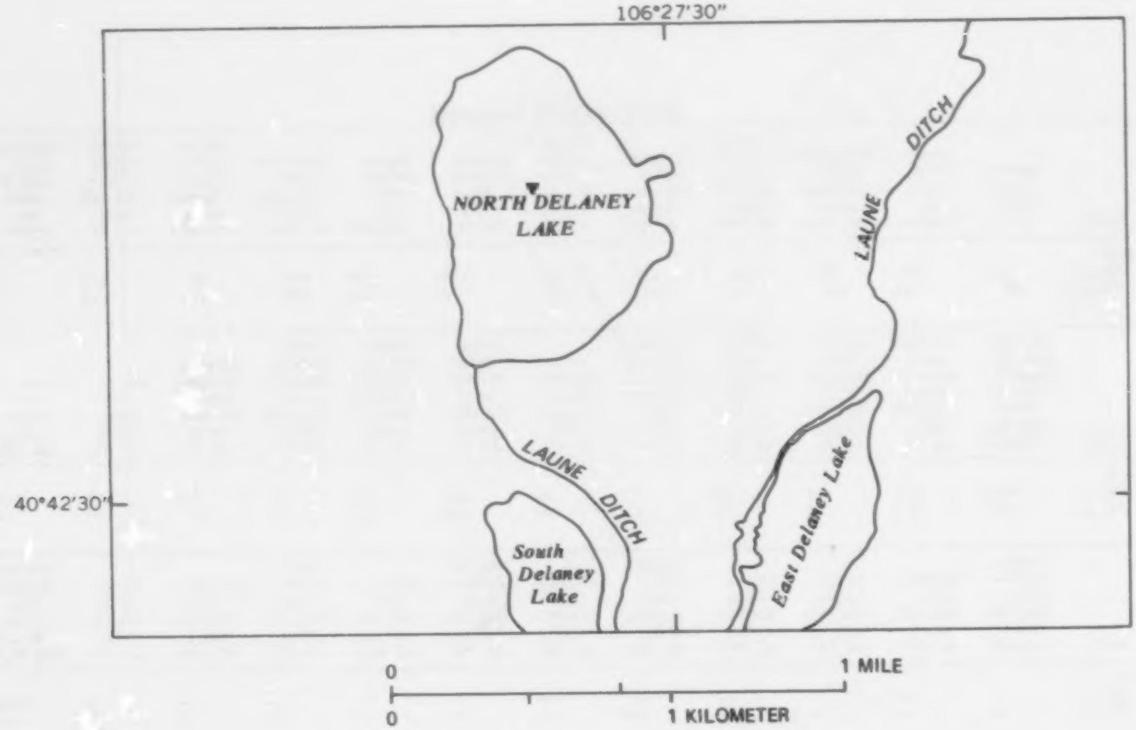
Storage capacity: 3,700 acre-ft

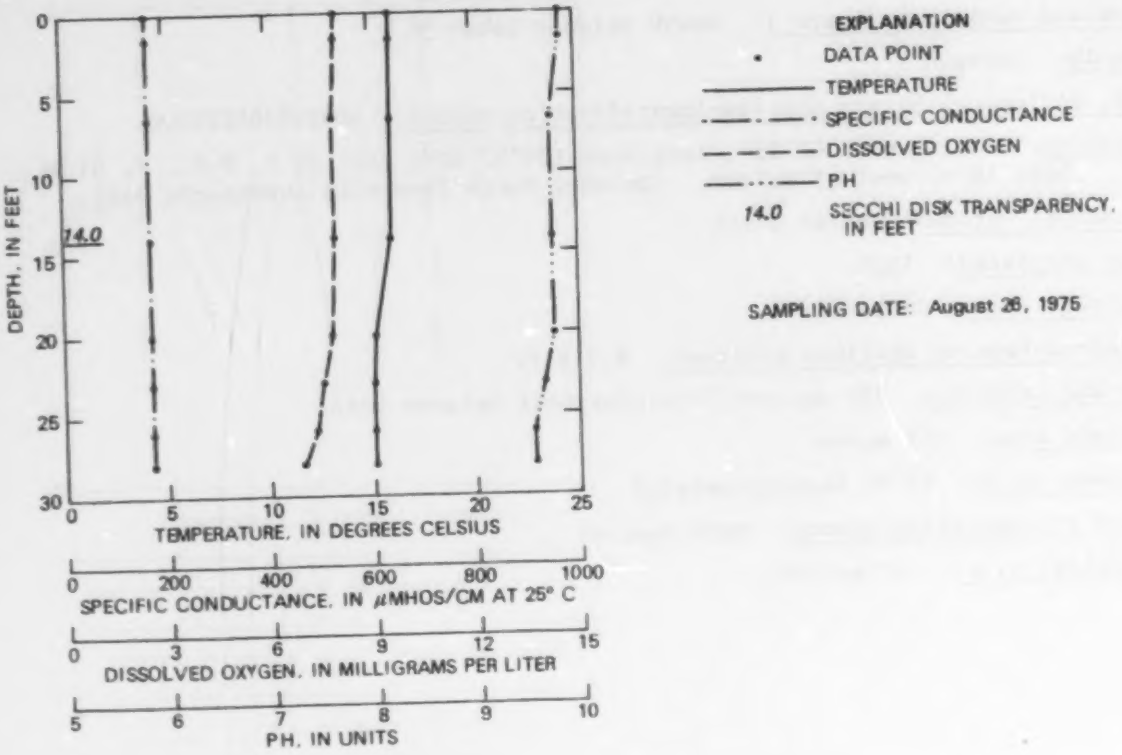
Surface area: 163 acres

Maximum depth: 30 ft (approximately)

Owner or regulating agency: Horn Ranches

Principal uses: Irrigation.


106°27'30"
40°42'30"
NORTH DELANEY LAKE
LAUNE DITCH
LAUNE DITCH
South Delaney Lake
East Delaney Lake
0
1 MILE
0
1 KILOMETER



WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 26...	1.6	68	18	5.6	8.5	.5	51	53	28	1.1	1.1	1.2
26...	28	66	18	5.2	8.4	.6	45	60	26	1.4	1.1	1.2

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 26...	96	.00	.00	.57	.57	.01	.01	.00	.00	4.5	--	--
26...	98	.00	.00	.12	.12	.01	.01	.00	.00	6.3	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 26...	--	--	10	--	0	--	--	--	--	--	--	13000
26...	--	--	10	--	10	--	--	--	--	--	--	--

Name and number on figure 1: South Delaney Lake--31

County: Jackson

U.S. Geological Survey station-identification number: 404208106272000

Location: Latitude 40°42'08", longitude 106°27'20"; sec. 2, T. 8 N., R. 81 W.; about 10 mi west of Walden. (Delaney Butte 7½-minute quadrangle map)

Principal inflow: Wolfer Ditch

Year completed: 1971

Drainage area: Offstream

Water-surface or spillway altitude: 8,115 ft

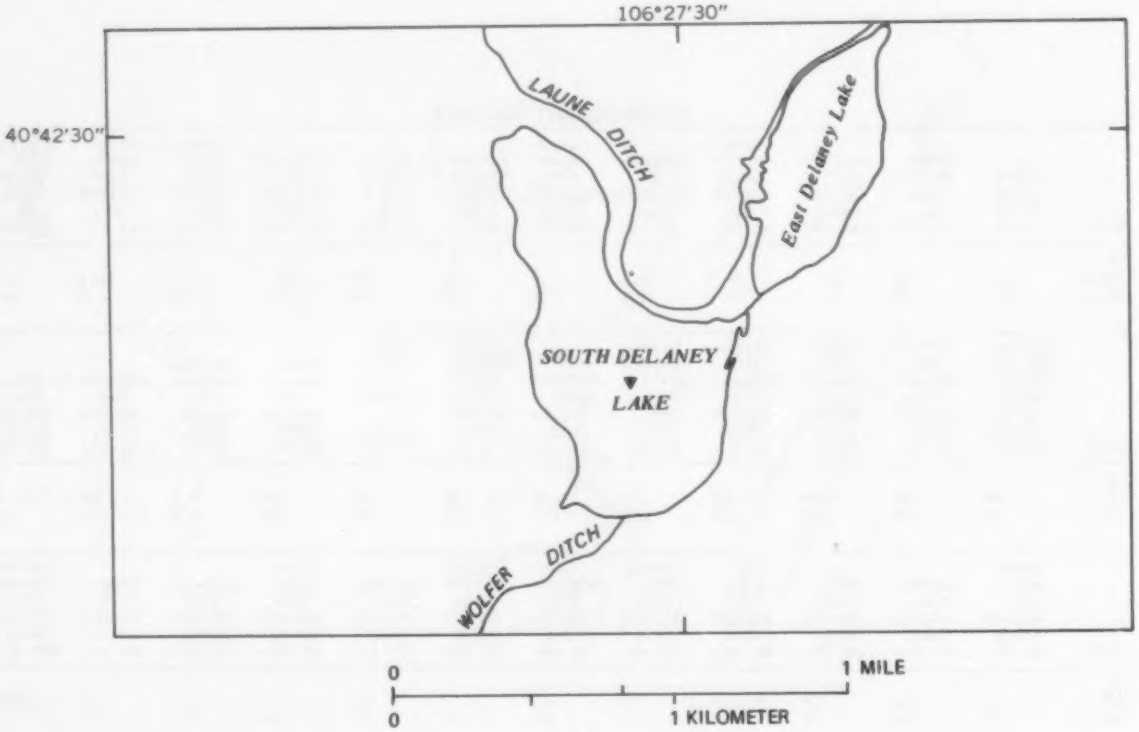
Storage capacity: 850 acre-ft (includes East Delaney Lake)

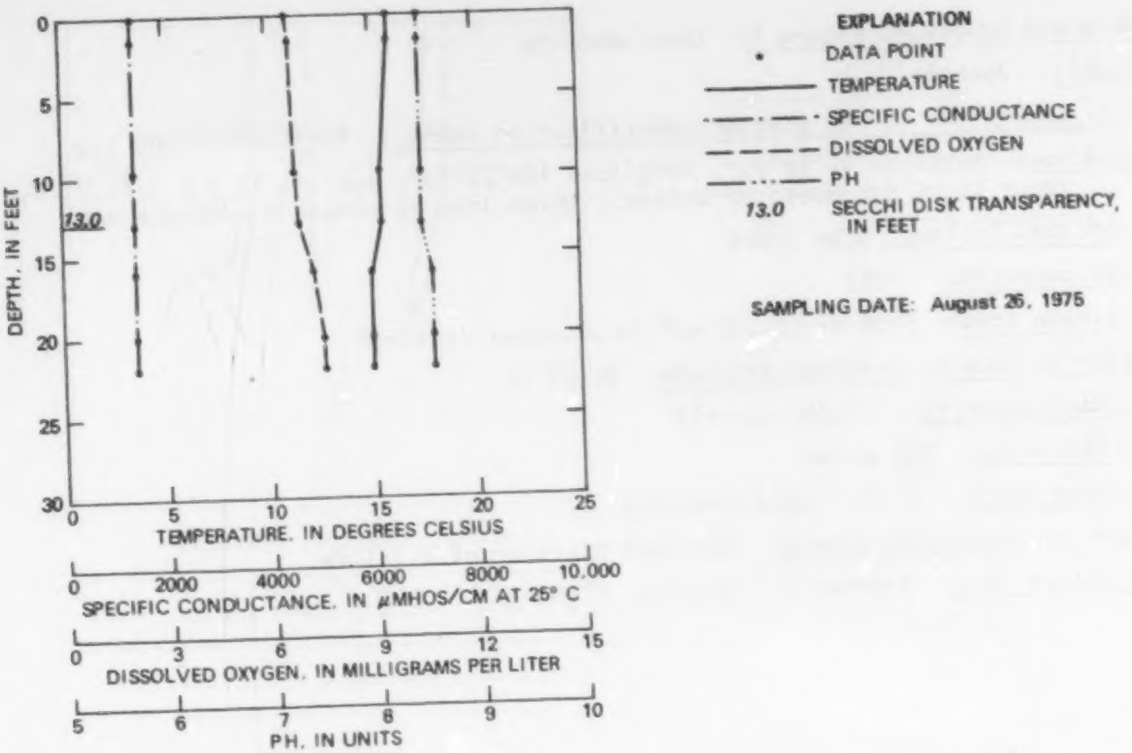
Surface area: 153 acres

Maximum depth: 25 ft (approximately)

Owner or regulating agency: Horn Ranches

Principal uses: Irrigation.


106°27'30"
40°42'30"
LAUNE DITCH
East Delaney Lake
SOUTH DELANEY
LAKE
WOLFER DITCH
0
1 MILE
0
1 KILOMETER



SAMPLING DATE: August 26, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 26...	1.6	540	81	82	140	8.6	95	90	710	19	1.6	.4
26...	22	530	79	80	140	8.6	111	91	690	19	1.5	.5

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 26...	1100	.02	.00	.67	.67	.01	.00	.01	.00	8.9	--	--
26...	1070	.00	.00	.76	.76	.02	.00	.01	.01	8.5	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 26...	--	--	10	--	20	--	--	--	--	--	--	1400
26...	--	--	20	--	20	--	--	--	--	--	--	--

Name and number on figure 1: Lake John--32

County: Jackson

U.S. Geological Survey station-identification number: 404555106275300

Location: Latitude 40°45'55", longitude 106°27'53"; sec. 3, T. 9 N., R. 81 W.; about 10 mi northwest of Walden. (Lake John 7½-minute quadrangle map)

Principal inflow: Lake Creek

Year completed: 1957

Drainage area: 54.6 mi^2 (3.06 mi^2 is non-contributing)

Water-surface or spillway altitude: 8,048 ft

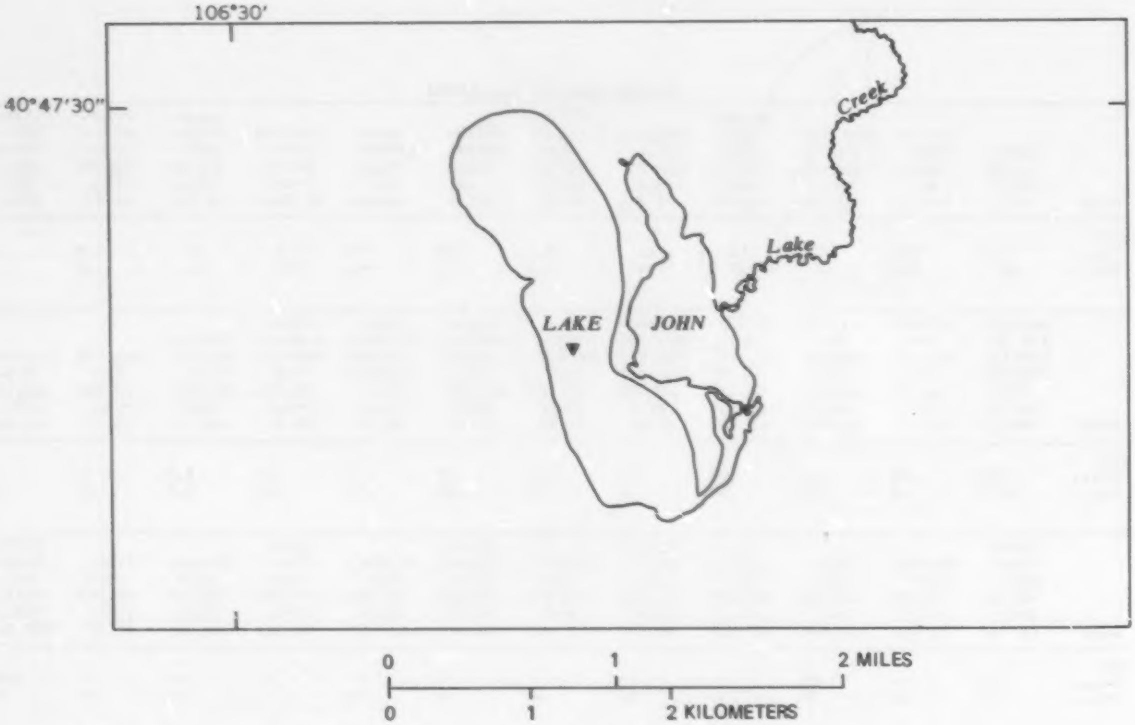
Storage capacity: 11,200 acre-ft

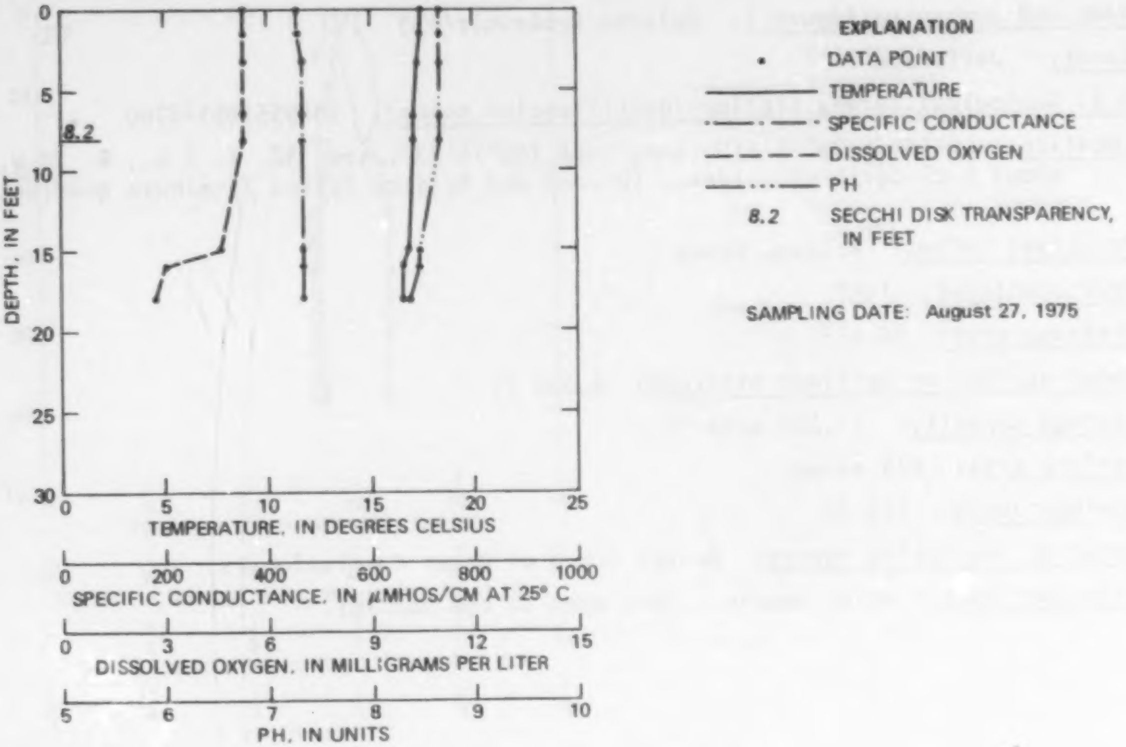
Surface area: 725 acres

Maximum depth: 20 ft (approximately)

Owner or regulating agency: Colorado Division of Wildlife

Principal uses: Recreation (boating, fishing).





WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 27...	1.6	180	29	27	40	10	221	185	72	6.9	.8	9.2
27...	18	170	26	25	43	10	222	182	71	6.9	.7	10

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 27...	306	.04	.00	.96	.96	.01	.00	.01	.00	22	--	--
27...	302	.05	.00	1.1	1.1	.01	.00	.01	.00	13	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 27...	--	--	30	--	0	--	--	--	--	--	--	520
27...	--	--	0	--	0	--	--	--	--	--	--	--

Name and number on figure 1: Ralston Reservoir--33

County: Jefferson

U.S. Geological Survey station-identification number: 394955105142700

Location: Latitude 39°49'55", longitude 105°14'27"; sec. 32, T. 2 S., R. 70 W.; about 5 mi north of Golden. (Golden and Ralston Buttes 7½-minute quadrangle maps)

Principal inflow: Ralston Creek

Year completed: 1957

Drainage area: 46 mi^2

Water-surface or spillway altitude: 6,046 ft

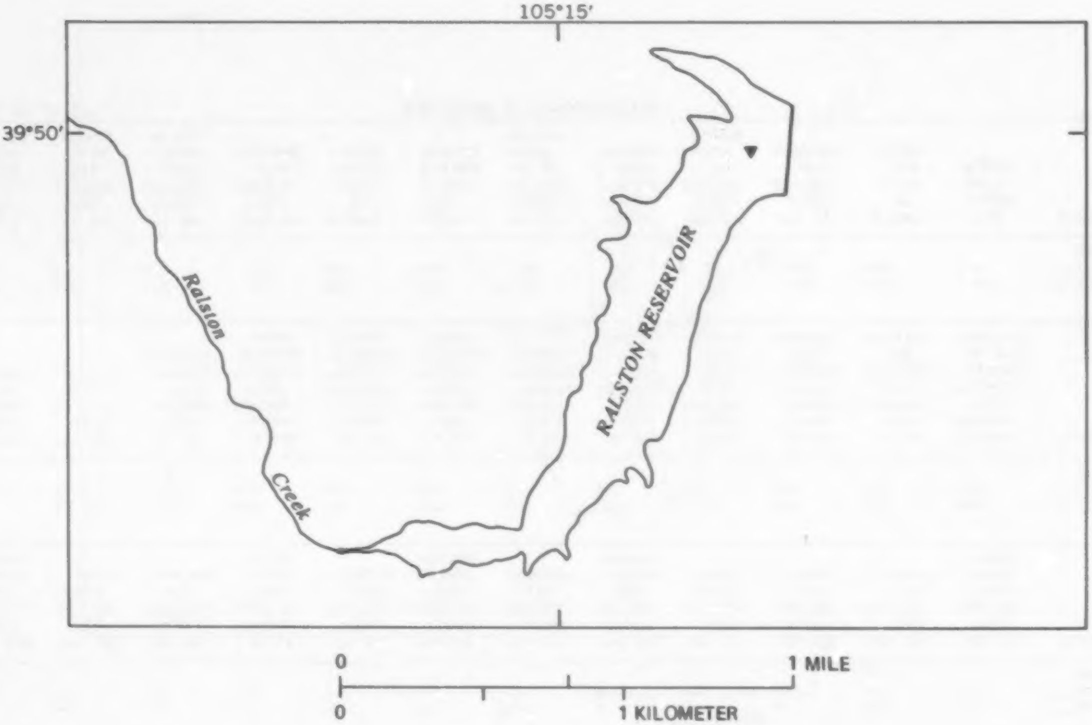
Storage capacity: 11,220 acre-ft

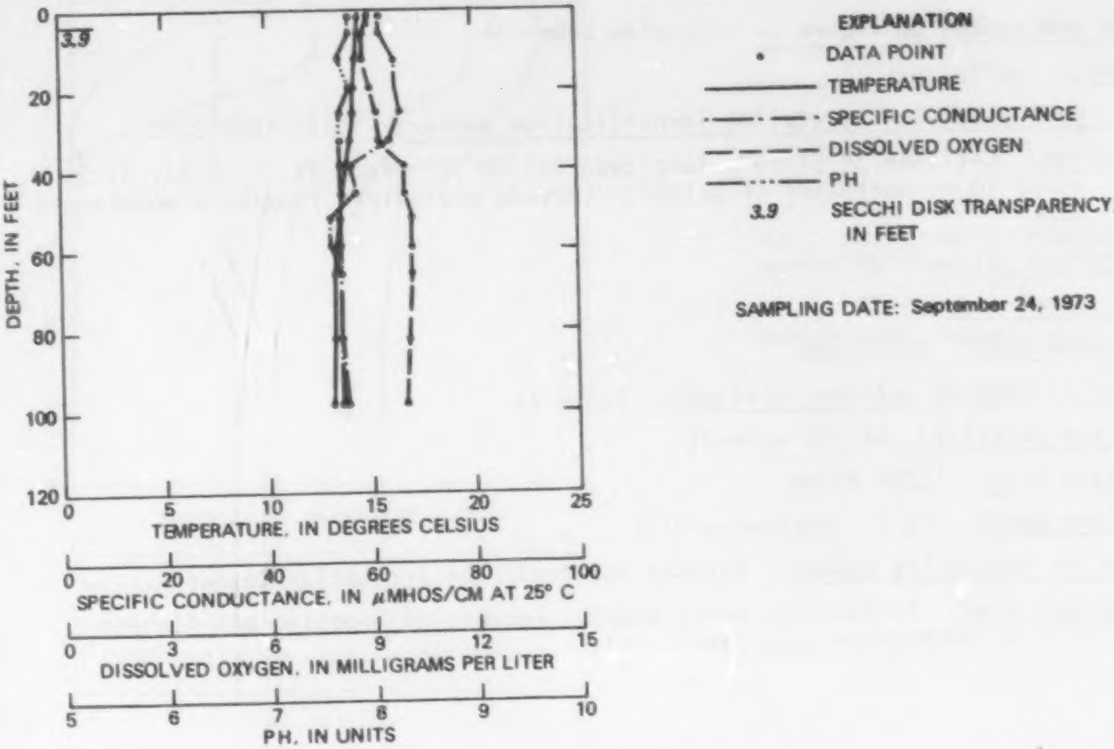
Surface area: 225 acres

Maximum depth: 125 ft

Owner or regulating agency: Denver Board of Water Commissioners

Principal uses: Water supply. (Not open to the public).





WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
24...	1.6	29	8.8	1.7	2.3	.8	25	21	8.8	.9	.3	7.7
24...	98	24	7.3	1.5	2.1	.7	23	19	7.2	.6	.2	8.0

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
24...	44	.03	--	--	--	.00	--	--	--	--	--	--
24...	39	.08	--	--	--	.02	--	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
24...	--	--	50	--	16	--	--	--	--	--	--	58
24...	--	--	10	--	32	--	--	--	--	--	--	--

Name and number on figure 1: Standley Lake--34

County: Jefferson

U.S. Geological Survey station-identification number: 395159105063200

Location: Latitude 39°51'59", longitude 105°06'32"; sec. 21, T. 2 S., R. 69 W.; about 10 mi northeast of Golden. (Arvada and Golden 7½-minute quadrangle maps)

Principal inflow: Offstream

Year completed: 1973

Drainage area: Offstream

Water-surface or spillway altitude: 5,506 ft

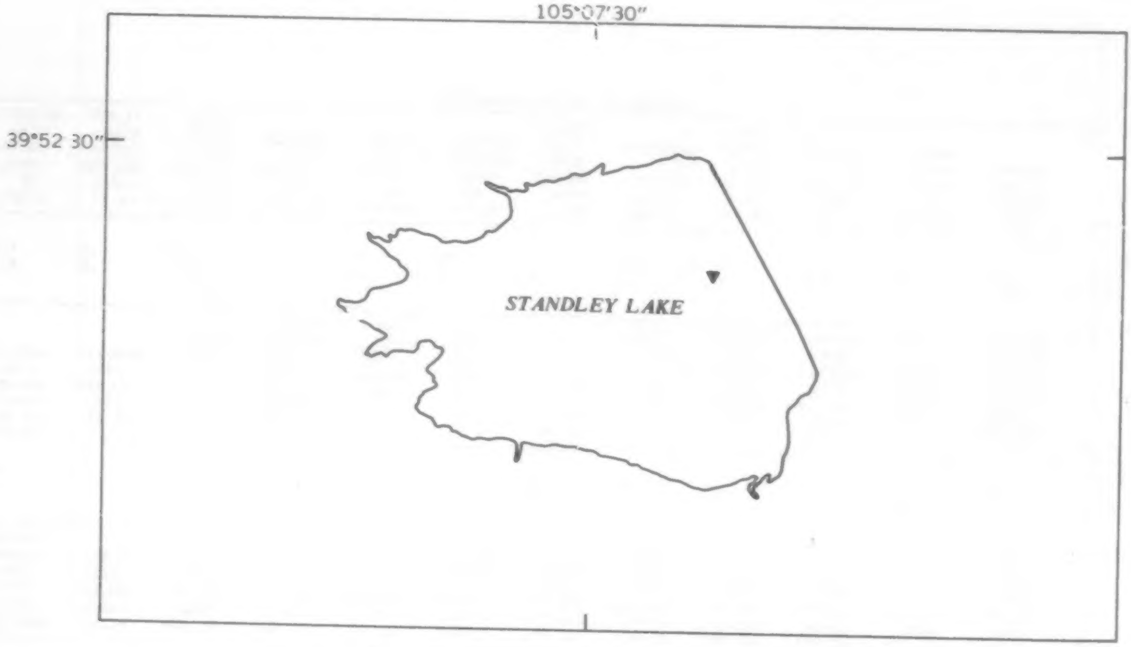
Storage capacity: 42,380 acre-ft

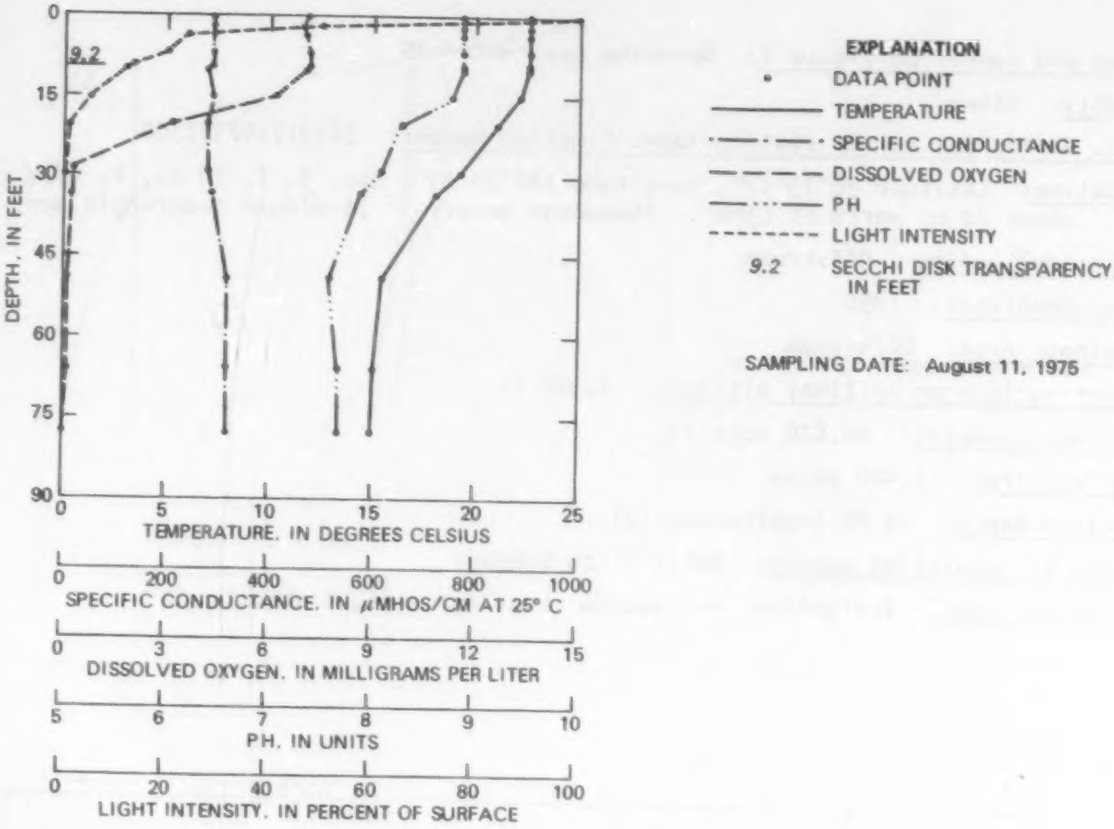
Surface area: 1,230 acres

Maximum depth: 75 ft (approximately)

Owner or regulating agency: Farmers Reservoir and Irrigation Company

Principal uses: Irrigation, water supply, recreation (boating and fishing--City of Westminster, by permit only).





SAMPLING DATE: August 11, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
11...	1.6	110	32	6.5	17	4.7	87	71	56	9.1	.7	2.0
11...	78	110	32	7.2	19	4.8	102	84	58	13	.7	3.4

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
11...	171	.05	.00	.40	.40	.00	.00	.01	.00	--	--	--
11...	191	.35	.25	.42	.67	.10	.02	.03	.05	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
11...	--	--	30	--	0	--	--	--	--	--	--	21
11...	--	--	270	--	710	--	--	--	--	--	--	--

Name and number on figure 1: Neenoshe Reservoir--35

County: Kiowa

U.S. Geological Survey station-identification number: 381917102392300

Location: Latitude 38°19'17", longitude 102°39'23"; sec. 9, T. 20 S., R. 47 W.; about 20 mi north of Lamar. (Neenoshe Reservoir 7½-minute quadrangle map)

Principal inflow: Offstream

Year completed: 1896

Drainage area: Offstream

Water-surface or spillway altitude: 3,934 ft

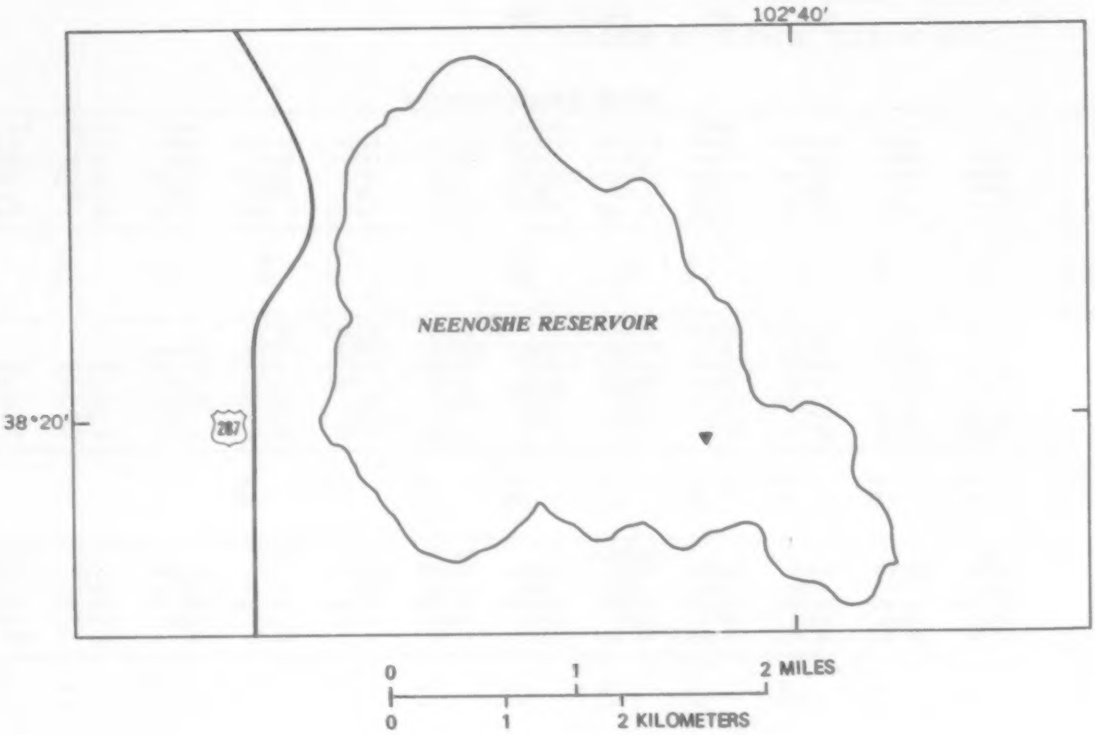
Storage capacity: 60,620 acre-ft

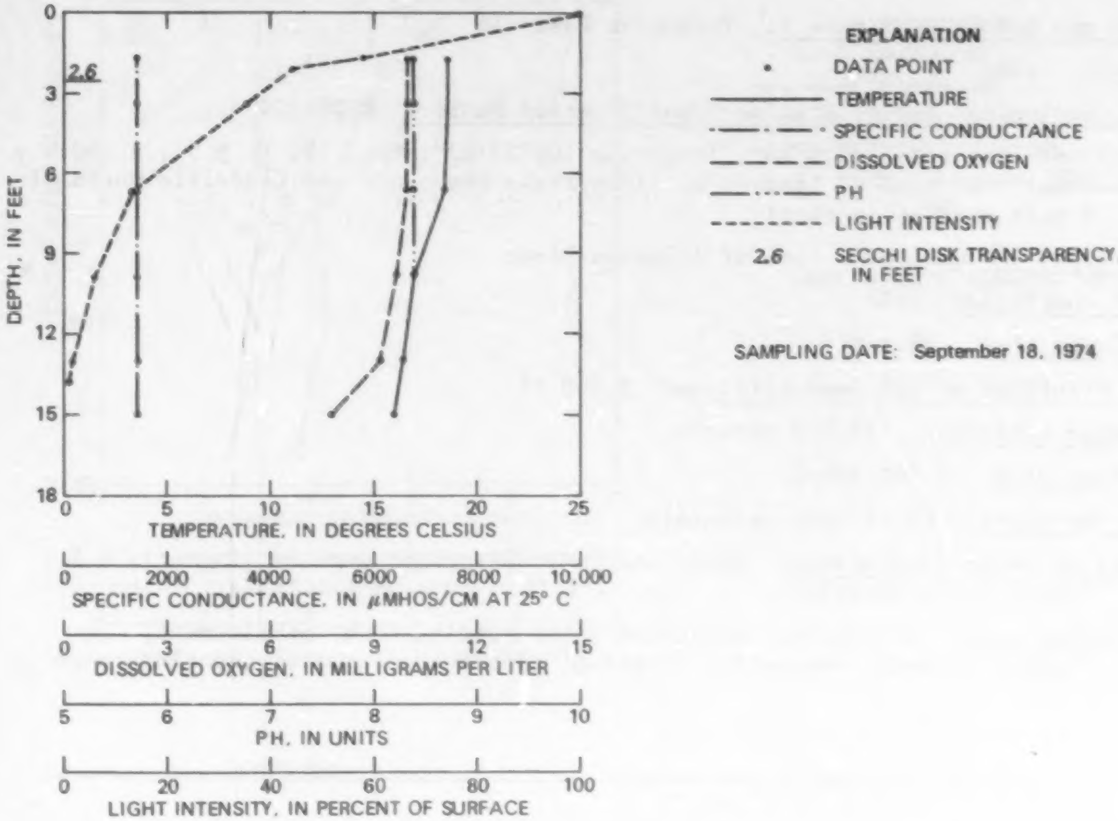
Surface area: 3,420 acres

Maximum depth: 15 ft (approximately)

Owner or regulating agency: Amity Ditch Company

Principal uses: Irrigation, recreation (boating-ramps, fishing).





SAMPLING DATE: September 18, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
18...	1.6	840	180	95	160	15	126	103	990	67	1.5	3.8
18...	15	820	180	90	180	15	124	102	970	66	1.5	3.9

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
18...	1570	.00	.01	.68	.69	.02	.01	.02	.00	7.2	--	--
18...	1570	.01	.00	.69	.69	.03	.01	.00	.02	9.7	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
18...	--	--	30	--	10	--	--	--	--	--	--	59000
18...	--	--	40	--	30	--	--	--	--	--	--	--

best copy available

Name and number on figure 1: Turquoise Lake--36

County: Lake

U.S. Geological Survey station-identification number: 07082400

Location: Latitude 39°15'14", longitude 106°22'22"; sec. 18, T. 9 S., R. 80 W.; about 5 mi west of Leadville. (Homestake Reservoir and Leadville North 7½-minute quadrangle maps)

Principal inflow: Lake Fork of Arkansas River

Year completed: 1968

Drainage area: 28.1 mi^2

Water-surface or spillway altitude: 9,869 ft

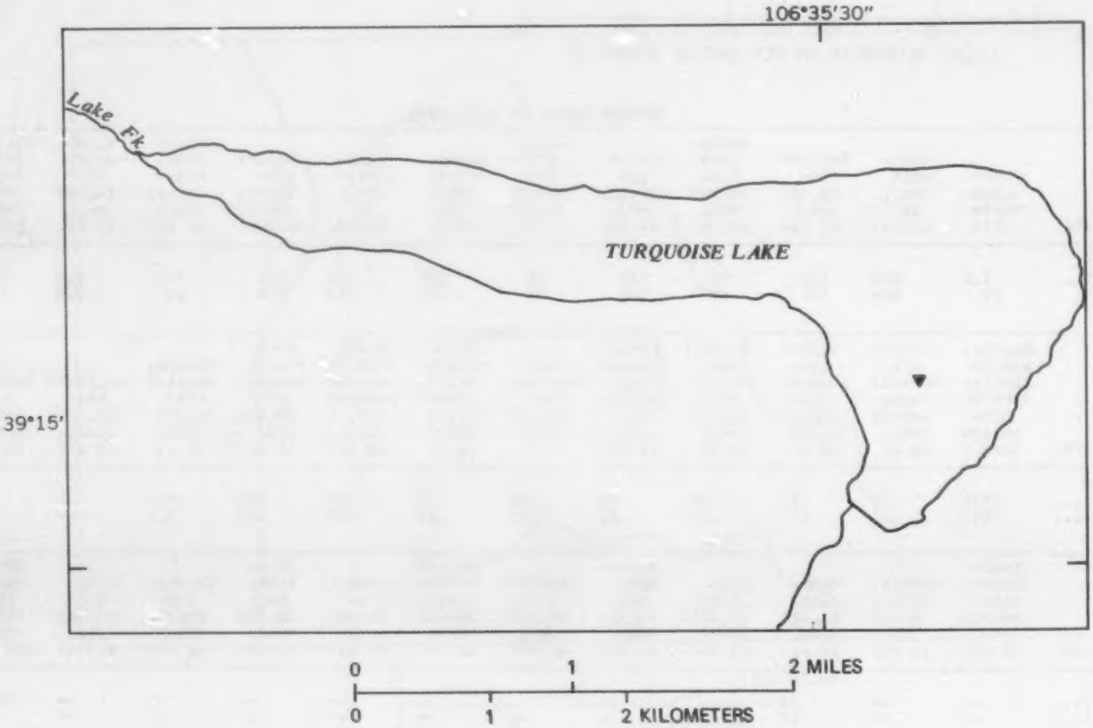
Storage capacity: 129,400 acre-ft

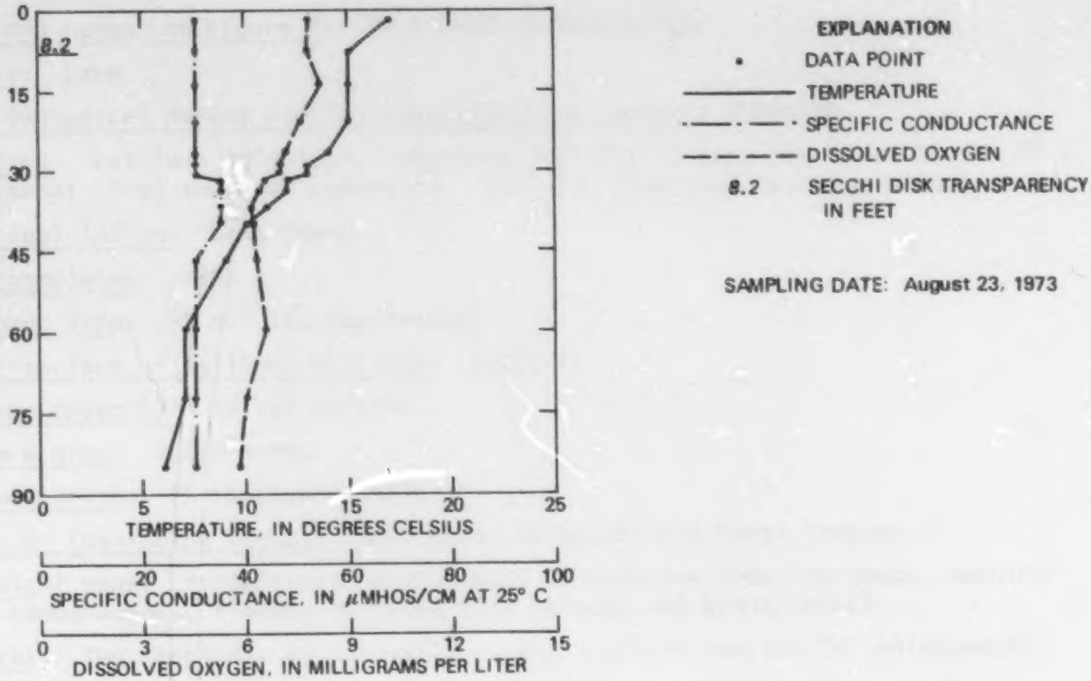
Surface area: 1,800 acres

Maximum depth: 85 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly U.S. Bureau of Reclamation)

Principal uses: Irrigation, municipal water supply, power development, industrial uses, recreation (fishing, camping-campgrounds, boating-ramps).





SAMPLING DATE: August 23, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
23...	1.6	14	4.6	.6	1.4	.4	15	12	3.8	1.0	.2	3.0
23...	85	12	3.8	.6	1.1	.4	15	12	3.6	.3	.2	3.9

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
23...	23	.01	--	--	--	.01	.01	--	--	--	--	--
23...	22	.01	--	--	--	.01	.01	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
23...	--	--	80	--	10	--	--	--	--	--	--	990
23...	--	--	140	--	20	--	--	--	--	--	--	--

Name and number on figure 1: Twin Lakes Reservoir--37

County: Lake

U.S. Geological Survey station-identification number: 07085400

Location: Latitude 39°04'51", longitude 106°18'47"; sec. 16, T. 11 S., R. 80 W.; about 13 mi south of Leadville. (Granite 7½-minute quadrangle map)

Principal inflow: Lake Creek

Year completed: 1958

Drainage area: 75 mi^2 (approximately)

Water-surface or spillway altitude: 9,200 ft

Storage capacity: 54,450 acre-ft

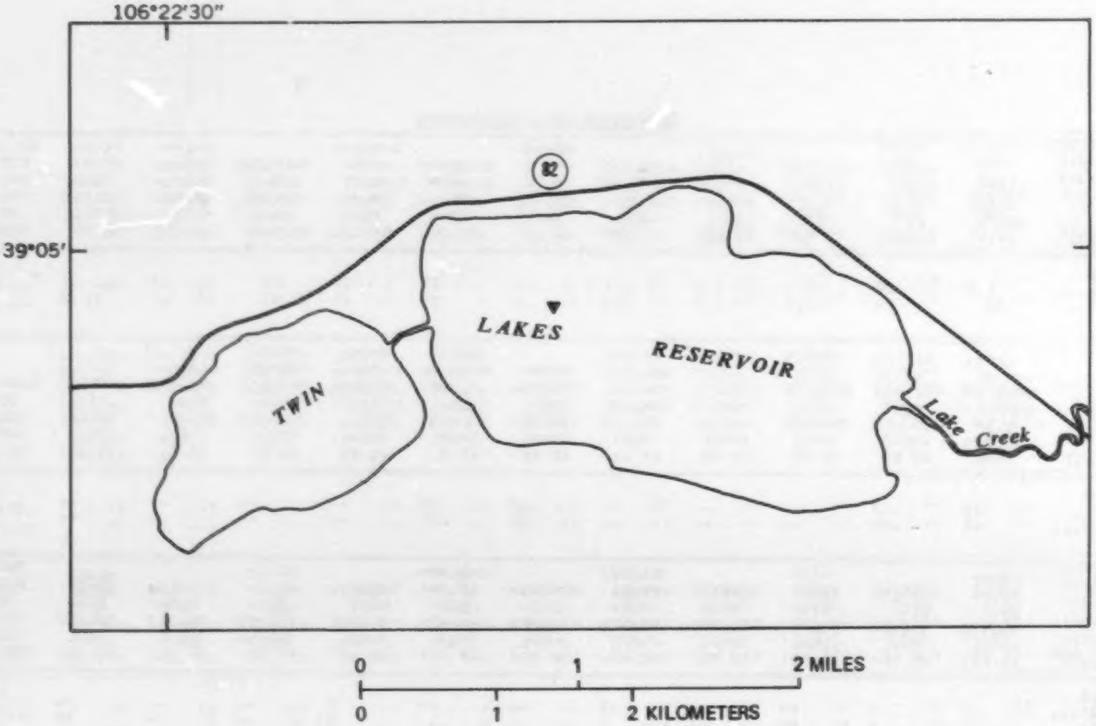
Surface area: 2,270 acres

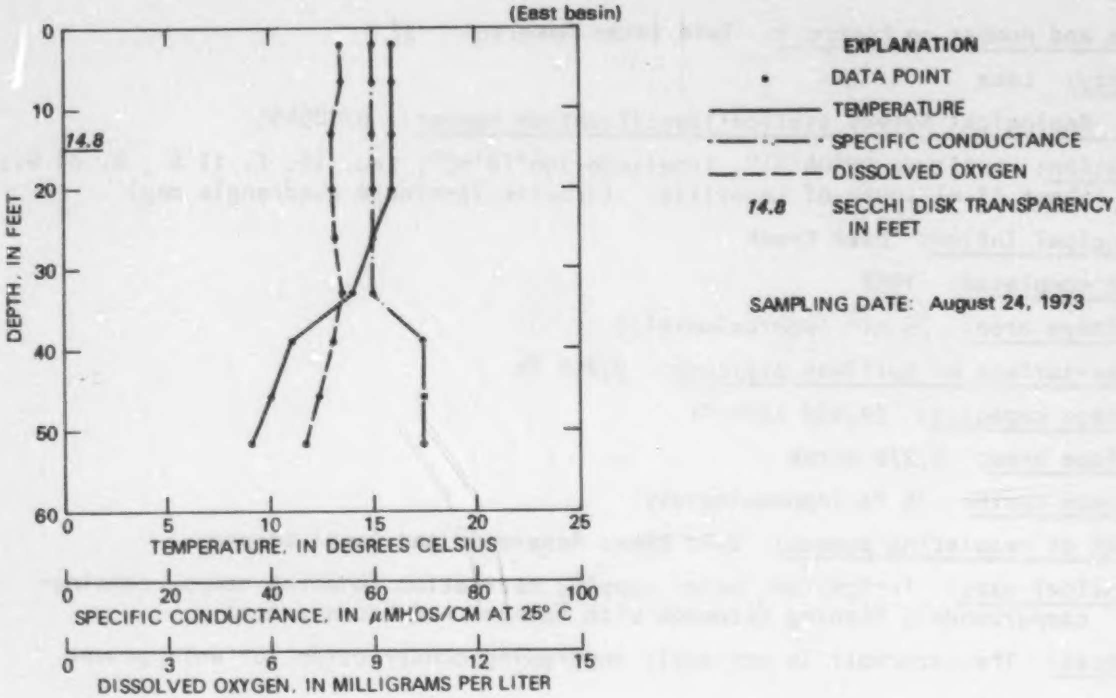
Maximum depth: 75 ft (approximately)

Owner or regulating agency: Twin Lakes Reservoir and Canal Company

Principal uses: Irrigation, water supply, recreation (boating-ramps, camping-campgrounds), fishing (stocked with rainbow and brown trout)

Remarks: The reservoir is currently undergoing construction for enlargement.





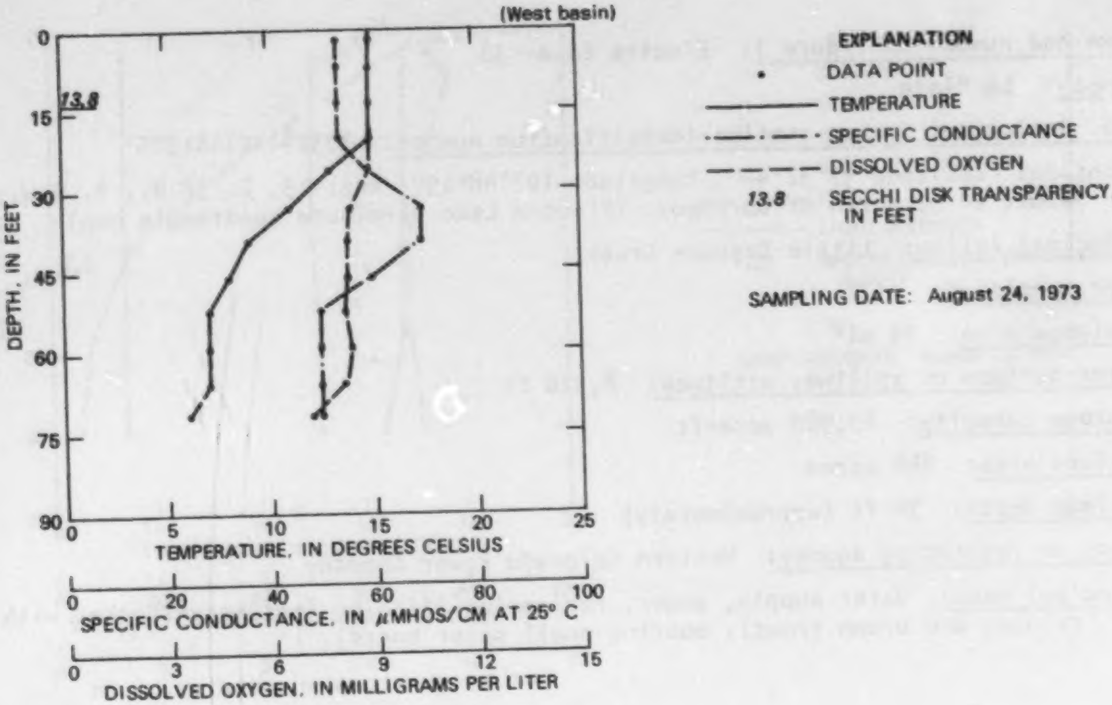
SAMPLING DATE: August 24, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
24...	1.6	29	9.9	1.0	1.4	.6	23	19	10	.3	.1	4.5
24...	52	29	9.4	1.3	1.5	.6	25	21	11	.2	.2	4.8

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
24...	39	.03	--	--	--	.02	.02	--	--	--	--	0
24...	42	.02	--	--	--	.03	.01	--	--	--	--	0

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
24...	--	9	60	--	10	--	--	0	--	--	30	130
24...	--	8	80	--	0	--	--	0	--	--	20	--



SAMPLING DATE: August 24, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
24...	1.6	30	10	1.1	1.2	.5	24	20	12	.1	.3	4.8
24...	72	25	8.3	1.0	1.1	.5	21	17	9.4	.6	.2	4.9

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
24...	42	.03	--	--	--	.00	.02	--	--	--	--	0
24...	37	.03	--	--	--	.02	.01	--	--	--	--	0

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
24...	--	10	110	--	0	--	--	1	--	--	20	470
24...	--	8	80	--	0	--	--	1	--	--	0	--

Name and number on figure 1: Electra Lake--38

County: La Plata

U.S. Geological Survey station-identification number: 373244107481900

Location: Latitude 37°32'44", longitude 107°48'19"; sec. 13, T. 38 N., R. 9 W.; about 20 mi north of Durango. (Electra Lake 7½-minute quadrangle map)

Principal inflow: Little Cascade Creek

Year completed: 1972

Drainage area: 39 mi^2

Water-surface or spillway altitude: 8,320 ft

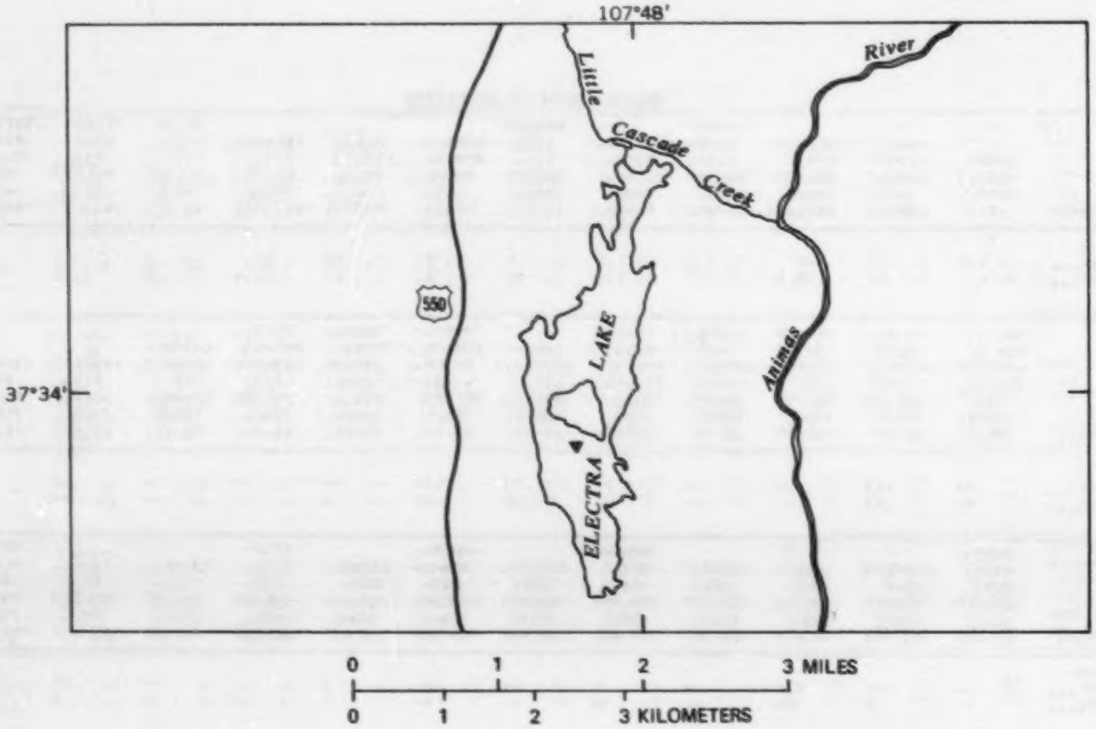
Storage capacity: 23,980 acre-ft

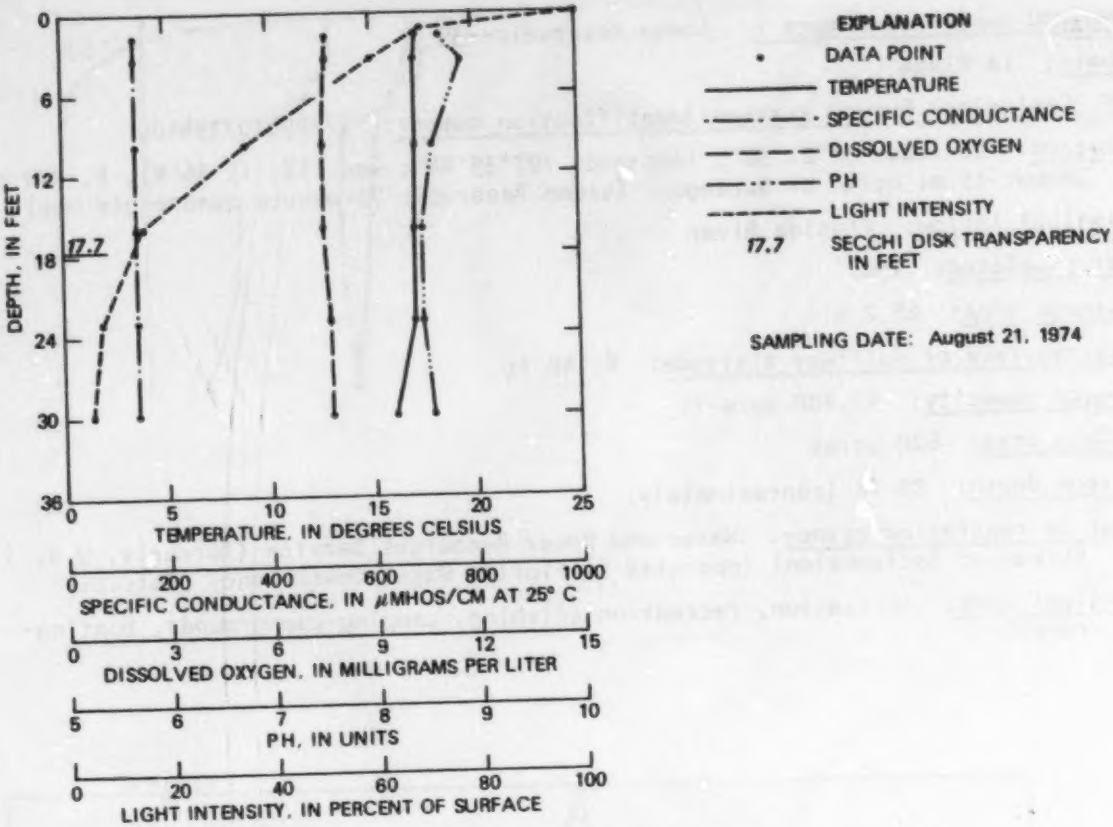
Surface area: 840 acres

Maximum depth: 30 ft (approximately)

Owner or regulating agency: Western Colorado Power Company

Principal uses: Water supply, power, recreation [fishing (hatchery-stocked with rainbow and brown trout), boating-small motor boats].


107°48'
River
Little
Cascade
Creek
550
LAKE
ELECTRA
Animas
37°34'
0
1
2
3 MILES
0
1
2
3 KILOMETERS



SAMPLING DATE: August 21, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
21...	1.6	69	21	4.0	3.4	.5	68	56	15	1.8	.2	2.6
21...	30	67	21	3.5	1.1	.4	68	56	14	.9	.2	2.7

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
21...	91	2.1	.05	.08	.13	.04	.00	.02	.02	16	--	--
21...	78	.09	.01	.09	.10	.06	.00	.02	.04	12	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
21...	--	--	90	--	30	--	--	--	--	--	--	10000
21...	--	--	50	--	20	--	--	--	--	--	--	--

Name and number on figure 1: Lemon Reservoir--39

County: La Plata

U.S. Geological Survey station-identification number: 372258107394400

Location: Latitude 37°22'58", longitude 107°39'44"; sec. 17, T. 36 N., R. 7 W.; about 15 mi north of Durango. (Lemon Reservoir 7½-minute quadrangle map)

Principal inflow: Florida River

Year completed: 1963

Drainage area: 68.2 mi^2

Water-surface or spillway altitude: 8,148 ft

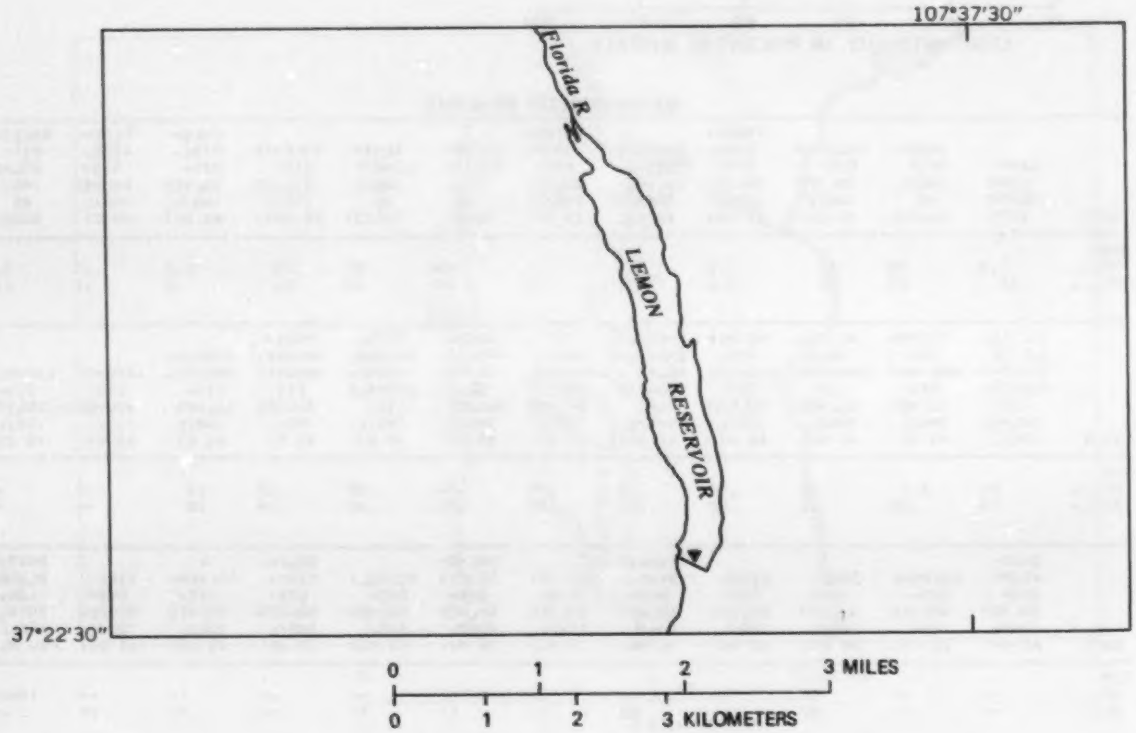
Storage capacity: 40,100 acre-ft

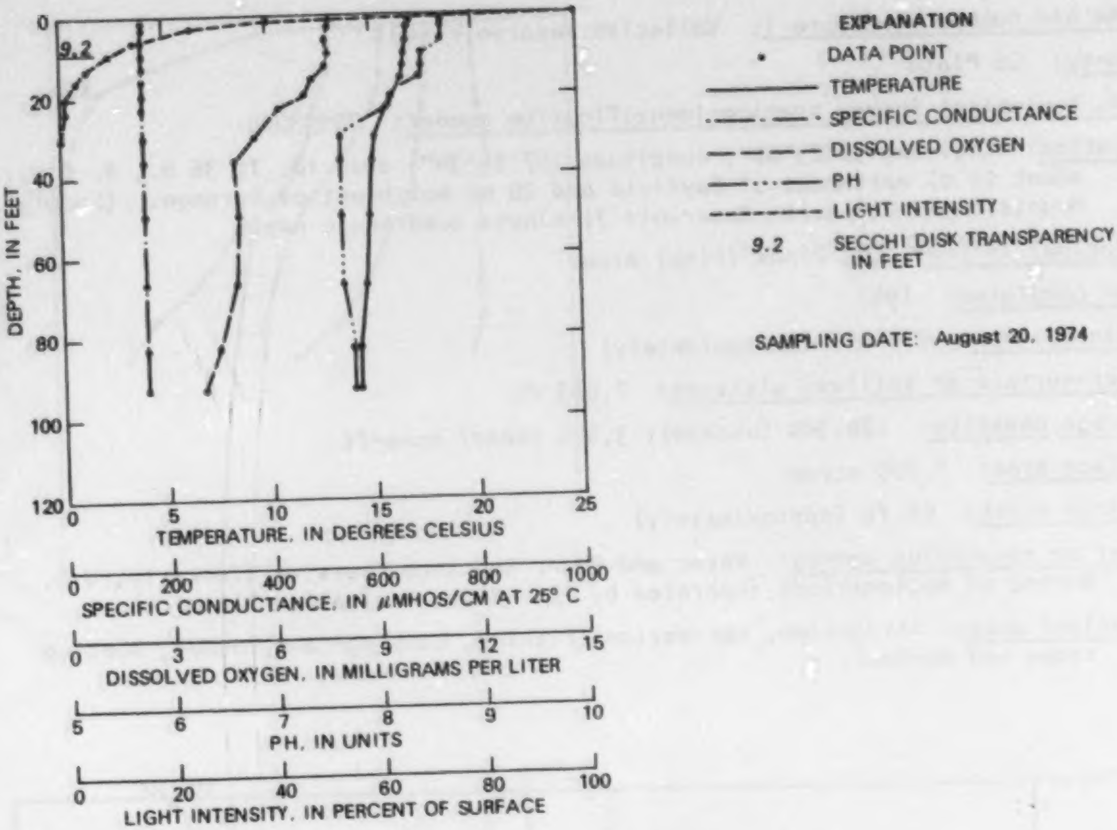
Surface area: 620 acres

Maximum depth: 95 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly, U.S. Bureau of Reclamation) (operated by Florida Water Conservancy District)

Principal uses: Irrigation, recreation (fishing, camping-campgrounds, boating-ramps).





SAMPLING DATE: August 20, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 20...	1.6	79	25	4.1	1.3	.7	89	73	14	1.0	.2	1.7
20...	92	85	26	4.8	1.3	.7	85	70	14	.9	.2	2.4

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 20...	92	.00	.05	.07	.12	.01	.00	.02	.00	47	--	--
20...	92	.01	.06	.05	.11	.00	.00	.03	.00	8.4	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 20...	--	--	10	--	20	--	--	--	--	--	--	2700
20...	--	--	10	--	130	--	--	--	--	--	--	--

Name and number on figure 1: Vallecito Reservoir--40

County: La Plata

U.S. Geological Survey station-identification number: 09353000

Location: Latitude 37°23'02", longitude 107°34'34"; sec. 18, T. 36 N., R. 6 W.; about 11 mi northeast of Bayfield and 20 mi northeast of Durango. (Ludwig Mountain and Vallecito Reservoir 7½-minute quadrangle maps)

Principal inflow: Los Pinos (Pine) River

Year completed: 1941

Drainage area: 270 mi^2 (approximately)

Water-surface or spillway altitude: 7,665 ft

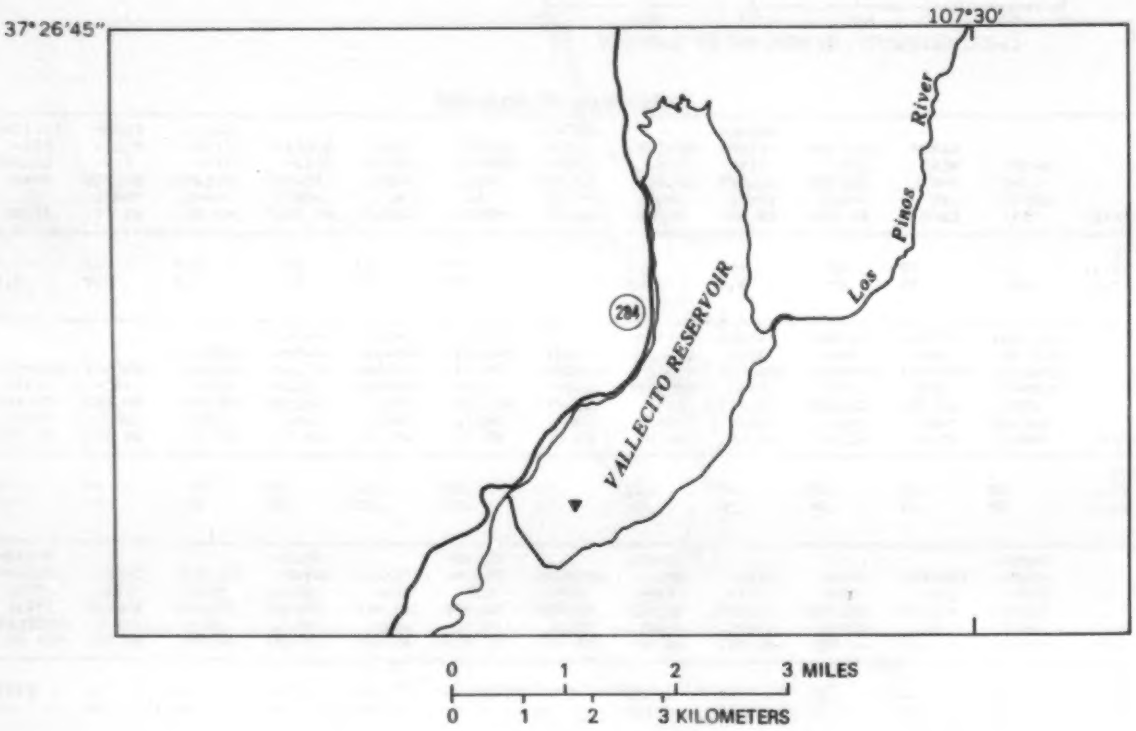
Storage capacity: 126,300 (usable); 3,400 (dead) acre-ft

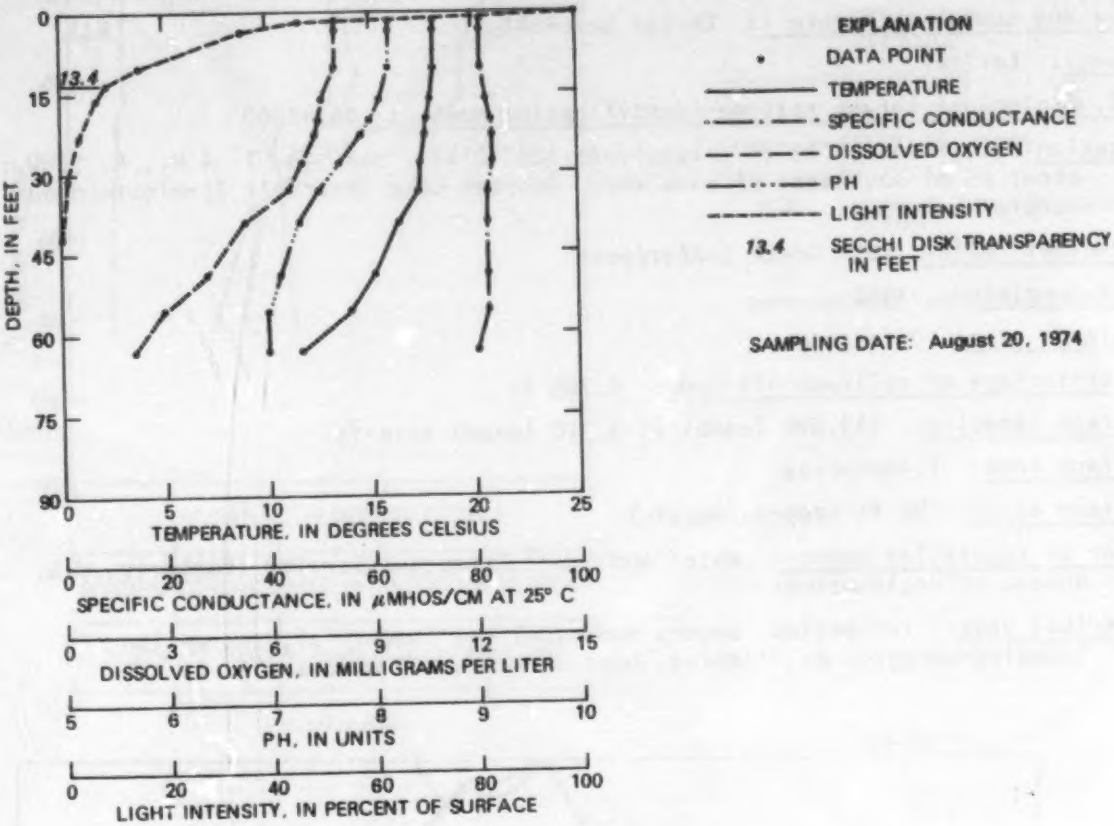
Surface area: 2,700 acres

Maximum depth: 65 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly, U.S. Bureau of Reclamation) (operated by Pine River Irrigation District)

Principal uses: Irrigation, recreation (fishing, camping-campgrounds, boating-ramps and marina).





SAMPLING DATE: August 20, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG 20...	1.6	39	12	2.2	1.5	.7	44	36	6.3	.8	.2	2.4
20...	63	38	12	2.0	1.4	.7	45	37	6.4	.9	.2	4.1

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG 20...	48	.00	.07	.12	.19	.01	.00	.02	.00	5.6	--	--
20...	50	.03	.04	.13	.17	.01	.00	.02	.00	20	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG 20...	--	--	10	--	0	--	--	--	--	--	--	4200
20...	--	--	10	--	0	--	--	--	--	--	--	--

Name and number on figure 1: Carter Lake--41

County: Larimer

U.S. Geological Survey station-identification number: 06742500

Location: Latitude 40°19'28", longitude 105°12'41"; sec. 10, T. 4 N., R. 70 W.; about 15 mi southwest of Loveland. (Carter Lake Reservoir 7½-minute quadrangle map)

Principal inflow: Dry Creek (offstream)

Year completed: 1952

Drainage area: Offstream

Water-surface or spillway altitude: 5,769 ft

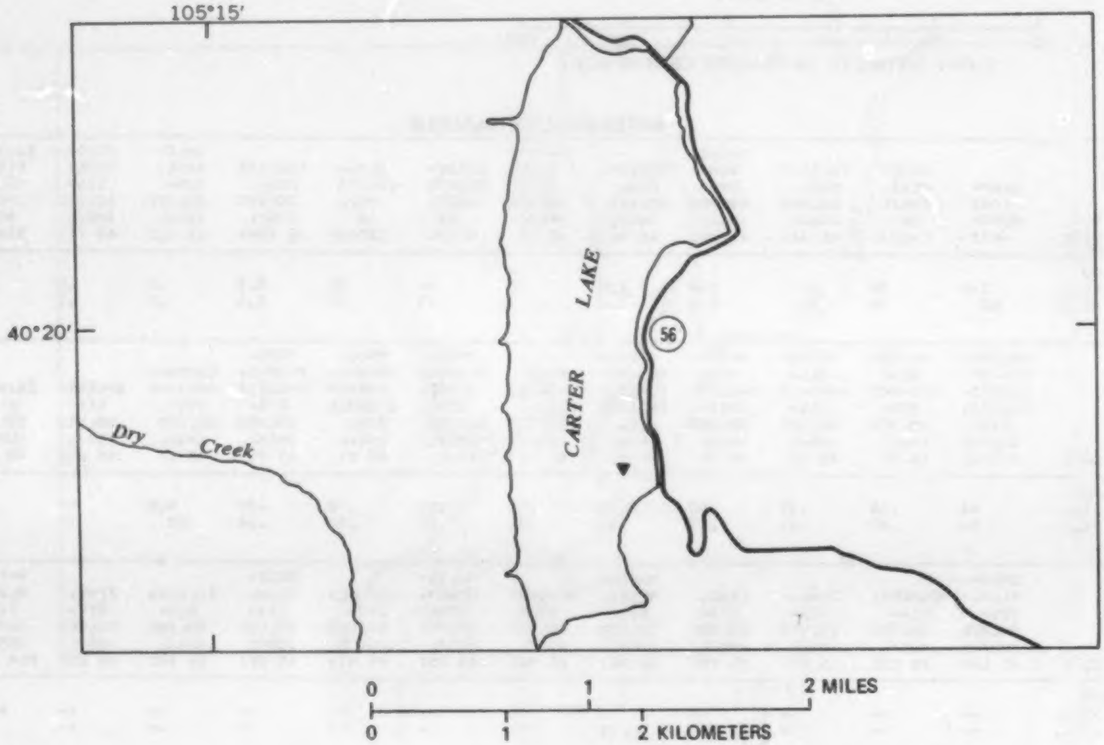
Storage capacity: 113,500 (usable); 3,310 (dead) acre-ft

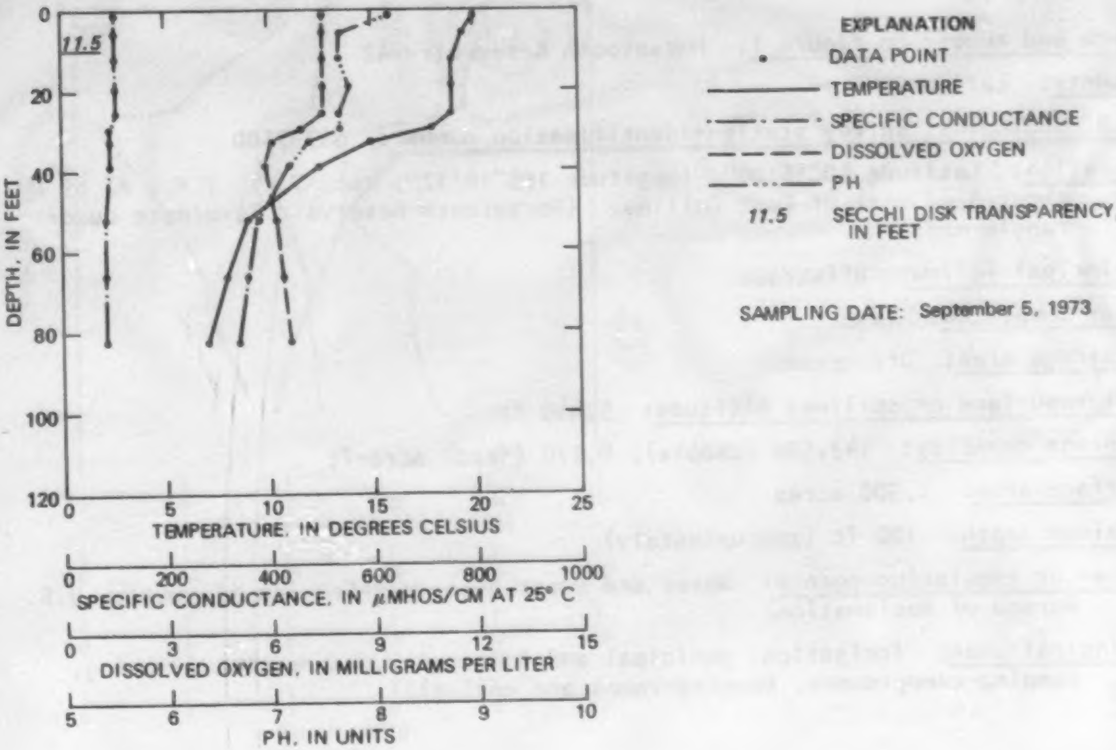
Surface area: 1,100 acres

Maximum depth: 80 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly, U.S. Bureau of Reclamation)

Principal uses: Irrigation, power, municipal and industrial, recreation (camping-campgrounds, fishing, boating-ramps and marina).





SAMPLING DATE: September 5, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
05...	2.0	41	14	1.4	2.4	.8	50	41	4.7	1.0	.1	.5
05...	82	38	13	1.4	2.3	.9	48	39	4.6	1.3	.0	2.4

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
05...	50	.16	--	--	--	--	.01	--	--	--	--	--
05...	50	.05	--	--	--	--	.01	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
05...	--	--	20	--	0	--	--	--	--	--	--	68
05...	--	--	20	--	10	--	--	--	--	--	--	--

Name and number on figure 1: Horsetooth Reservoir--42

County: Larimer

U.S. Geological Survey station-identification number: 06737500

Location: Latitude 40°36'00", longitude 105°10'12"; sec. 7, T. 7 N., R. 69 W.; about 5 mi west of Fort Collins. (Horsetooth Reservoir 7½-minute quadrangle map)

Principal inflow: Offstream

Year completed: 1949

Drainage area: Offstream

Water-surface or spillway altitude: 5,440 ft

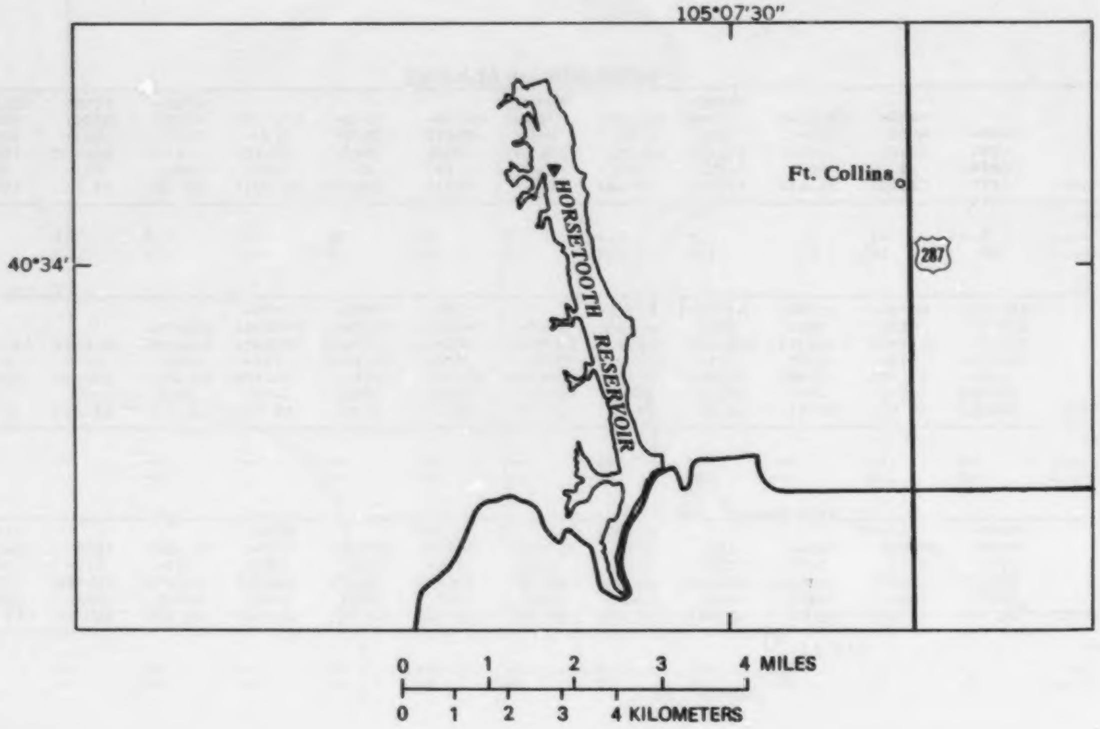
Storage capacity: 143,500 (usable); 8,270 (dead) acre-ft

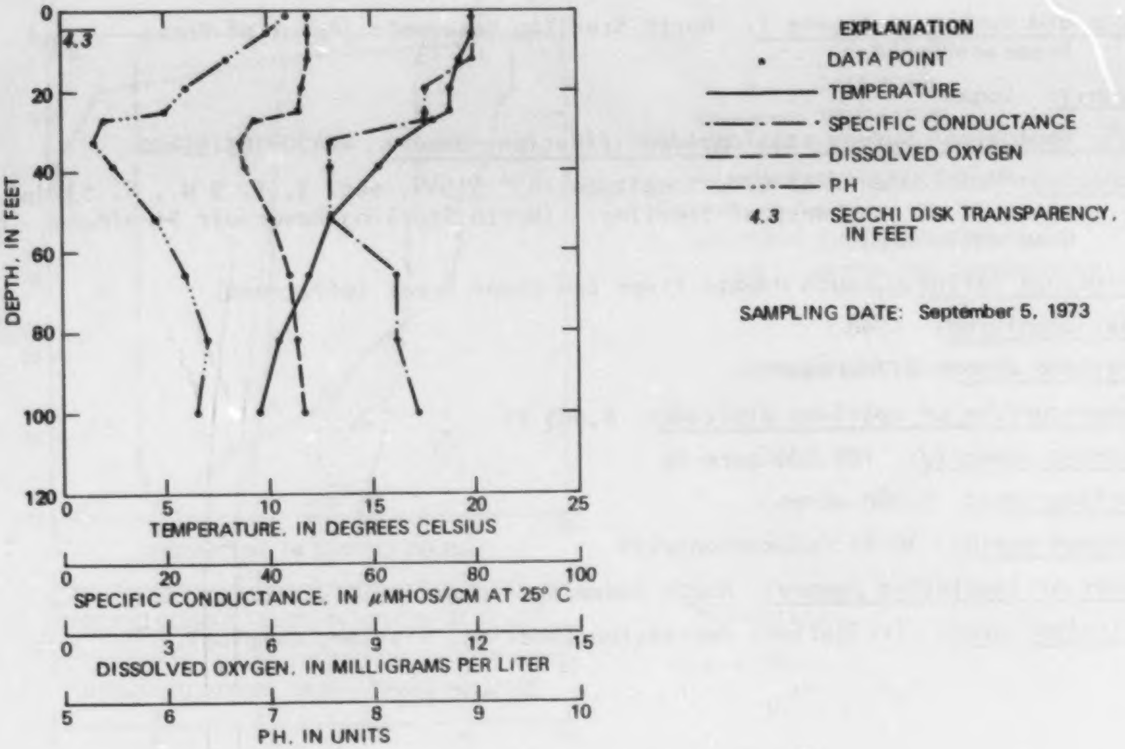
Surface area: 1,900 acres

Maximum depth: 100 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly, U.S. Bureau of Reclamation)

Principal uses: Irrigation, municipal and industrial, recreation (fishing, camping-campgrounds, boating-ramps and marina).


105°07'30"
40°34'
Ft. Collins
287
HORSETOOTH RESERVOIR
0 1 2 3 4 MILES
0 1 2 3 4 KILOMETERS



SAMPLING DATE: September 5, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
05...	2.0	27	8.5	1.5	2.5	.7	34	28	10	1.1	.1	4.3
05...	100	28	8.6	1.6	3.4	.8	41	34	5.4	1.1	.1	4.7

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
05...	46	.02	--	--	--	--	.03	--	--	--	--	--
05...	46	.08	--	--	--	--	.03	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
05...	--	--	80	--	20	--	--	--	--	--	--	0
05...	--	--	80	--	30	--	--	--	--	--	--	--

Name and number on figure 1: North Sterling Reservoir (Point of Rocks Reservoir)--43

County: Logan

U.S. Geological Survey station-identification number: 404707103155400

Location: Latitude 40°47'07", longitude 103°15'54"; sec. 3, T. 9 N., R. 53 W.; about 12 mi northwest of Sterling. (North Sterling Reservoir 7½-minute quadrangle map)

Principal inflow: South Platte River and Cedar Creek (offstream)

Year completed: 1948

Drainage area: Offstream

Water-surface or spillway altitude: 4,069 ft

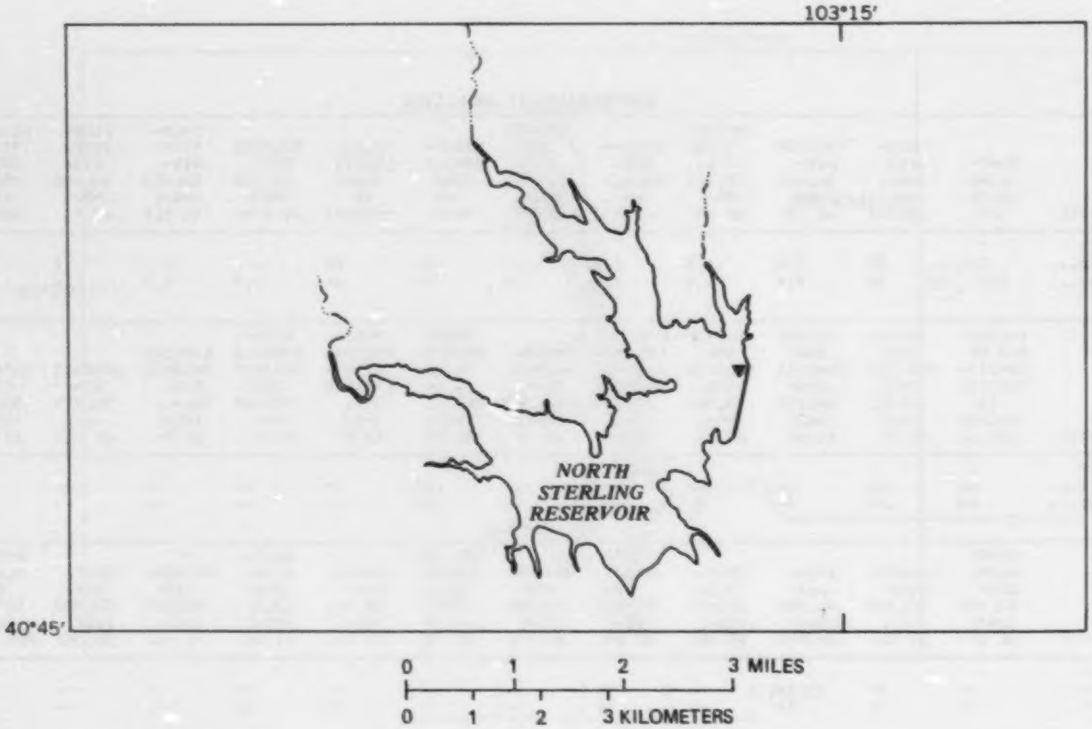
Storage capacity: 109,000 acre-ft

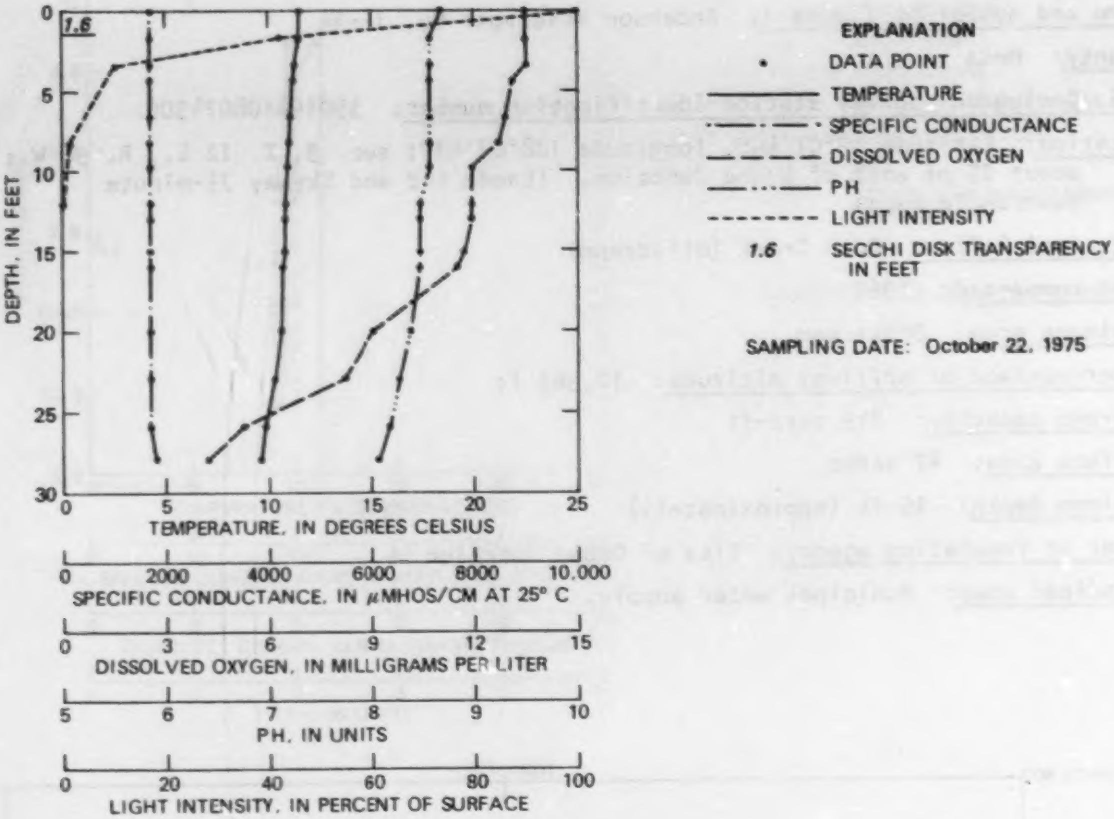
Surface area: 3,080 acres

Maximum depth: 30 ft (approximately)

Owner or regulating agency: North Sterling Irrigation District

Principal uses: Irrigation, recreation (boating, fishing, camping).





SAMPLING DATE: October 22, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT												
22...	1.6	630	140	67	160	9.0	228	187	650	70	1.1	4.9
22...	26	650	150	67	160	9.0	283	232	630	74	1.0	8.2

DATE	SOLIUS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
OCT												
22...	1220	1.6	.00	.71	.71	.03	.01	.03	.00	11	--	--
22...	1250	1.5	.26	.84	1.1	.07	.07	.07	.00	30	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
OCT												
22...	--	--	40	--	0	--	--	--	--	--	--	130000
22...	--	--	20	--	50	--	--	--	--	--	--	--

Name and number on figure 1: Anderson Reservoir No. 1--44

County: Mesa

U.S. Geological Survey station-identification number: 390144108074300

Location: Latitude 39°01'44", longitude 108°07'43"; sec. 9, T. 12 S., R. 96 W.; about 25 mi east of Grand Junction. (Lands End and Skyway 7½-minute quadrangle maps)

Principal inflow: Deep Creek (offstream)

Year completed: 1962

Drainage area: Offstream

Water-surface or spillway altitude: 10,363 ft

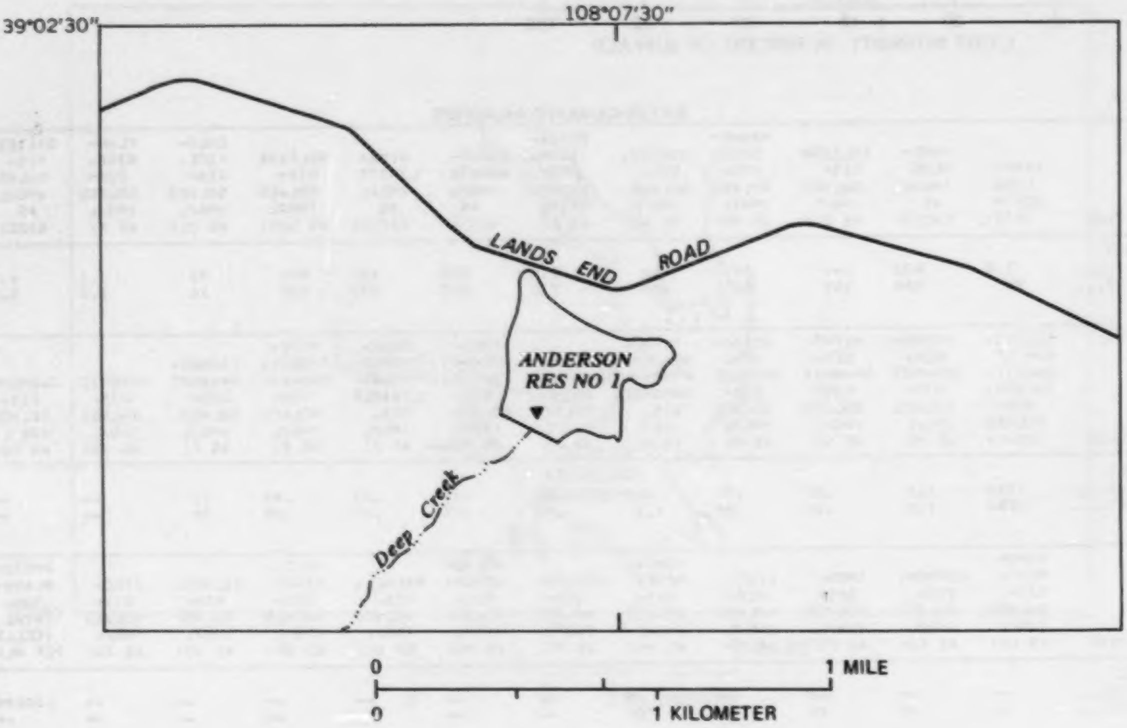
Storage capacity: 819 acre-ft

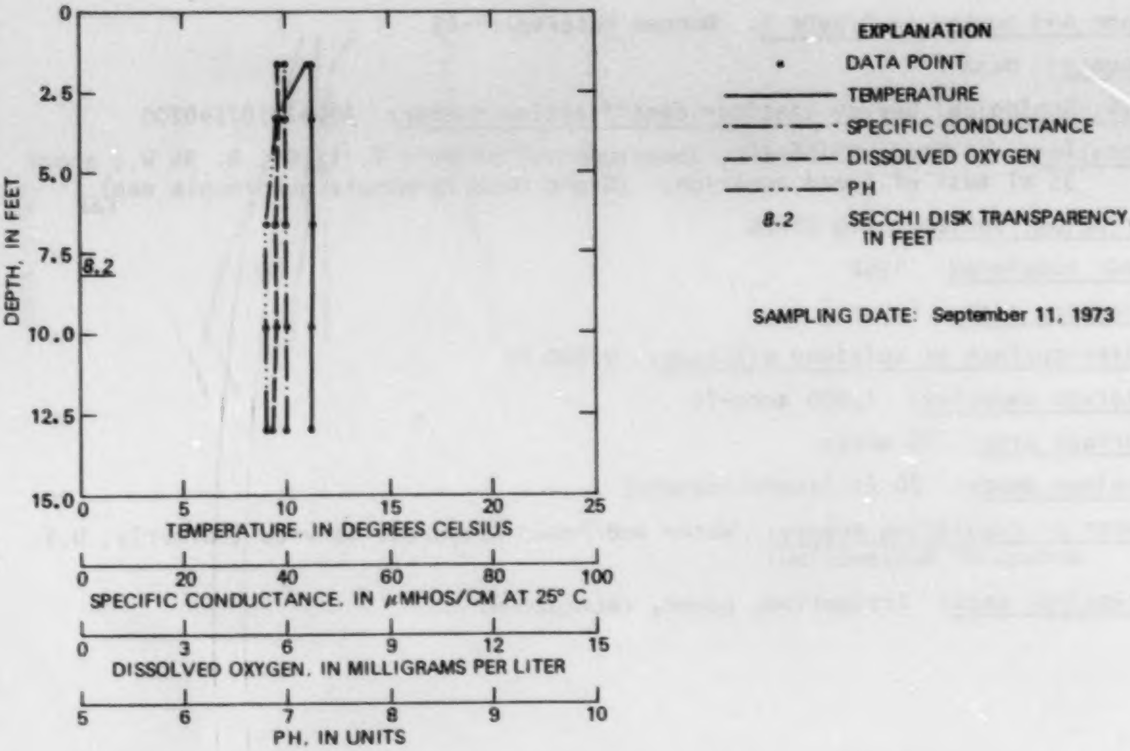
Surface area: 47 acres

Maximum depth: 15 ft (approximately)

Owner or regulating agency: City of Grand Junction

Principal uses: Municipal water supply.


39°02'30"
108°07'30"
LANDS END ROAD
ANDERSON RES NO 1
Deep Creek
0
1 MILE
0
1 KILOMETER



SAMPLING DATE: September 11, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
11...	1.6	14	4.3	.9	.5	.5	22	18	.7	.4	.1	2.2
11...	13	14	3.9	1.1	1.0	.5	20	16	1.3	.2	.0	2.2

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
11...	21	.00	--	--	--	.01	.00	--	--	--	--	--
11...	20	.00	--	--	--	.01	.00	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
11...	--	--	80	--	10	--	--	--	--	--	--	2000
11...	--	--	80	--	0	--	--	--	--	--	--	--

Name and number on figure 1: Bonham Reservoir--45

County: Mesa

U.S. Geological Survey station-identification number: 390614107540200

Location: Latitude 39°06'14", longitude 107°54'02"; T. 11 S., R. 94 W.; about 35 mi east of Grand Junction. (Grand Mesa 7½-minute quadrangle map)

Principal inflow: Big Creek

Year completed: 1962

Drainage area: 6.9 mi^2

Water-surface or spillway altitude: 9,800 ft

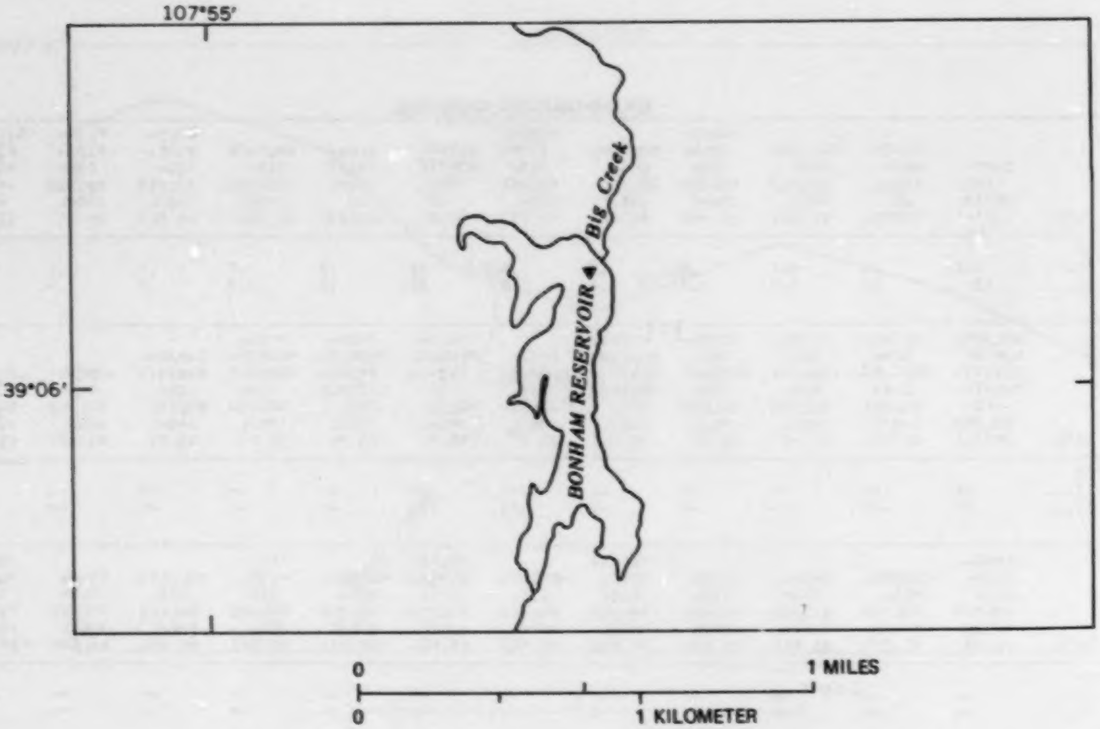
Storage capacity: 1,000 acre-ft

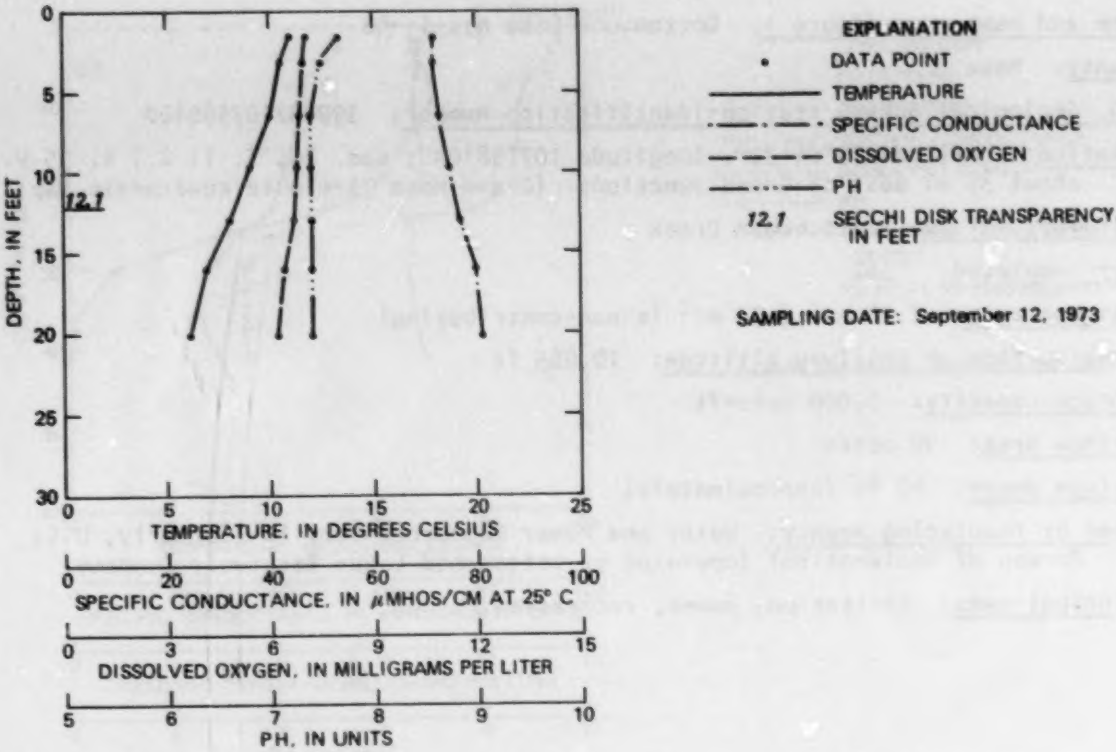
Surface area: 75 acres

Maximum depth: 20 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly, U.S. Bureau of Reclamation)

Principal uses: Irrigation, power, recreation.





SAMPLING DATE: September 12, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
12...	1.6	30	8.7	2.0	1.8	1.2	46	38	1.3	.1	.1	14
12...	20	31	8.9	2.1	2.1	1.2	45	37	1.5	.3	.1	14

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
12...	52	.01	--	--	--	.04	.03	--	--	--	--	--
12...	53	.13	--	--	--	.01	.03	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
12...	--	--	60	--	40	--	--	--	--	--	--	580
12...	--	--	60	--	30	--	--	--	--	--	--	--

Name and number on figure 1: Cottonwood Lake No. 1--46

County: Mesa

U.S. Geological Survey station-identification number: 390432107580400

Location: Latitude 39°04'32", longitude 107°58'04"; sec. 26, T. 11 S., R. 95 W.; about 35 mi east of Grand Junction. (Grand Mesa 7½-minute quadrangle map)

Principal inflow: Cottonwood Creek

Year completed: 1962

Drainage area: 2.75 mi^2 (.77 mi^2 is non-contributing)

Water-surface or spillway altitude: 10,065 ft

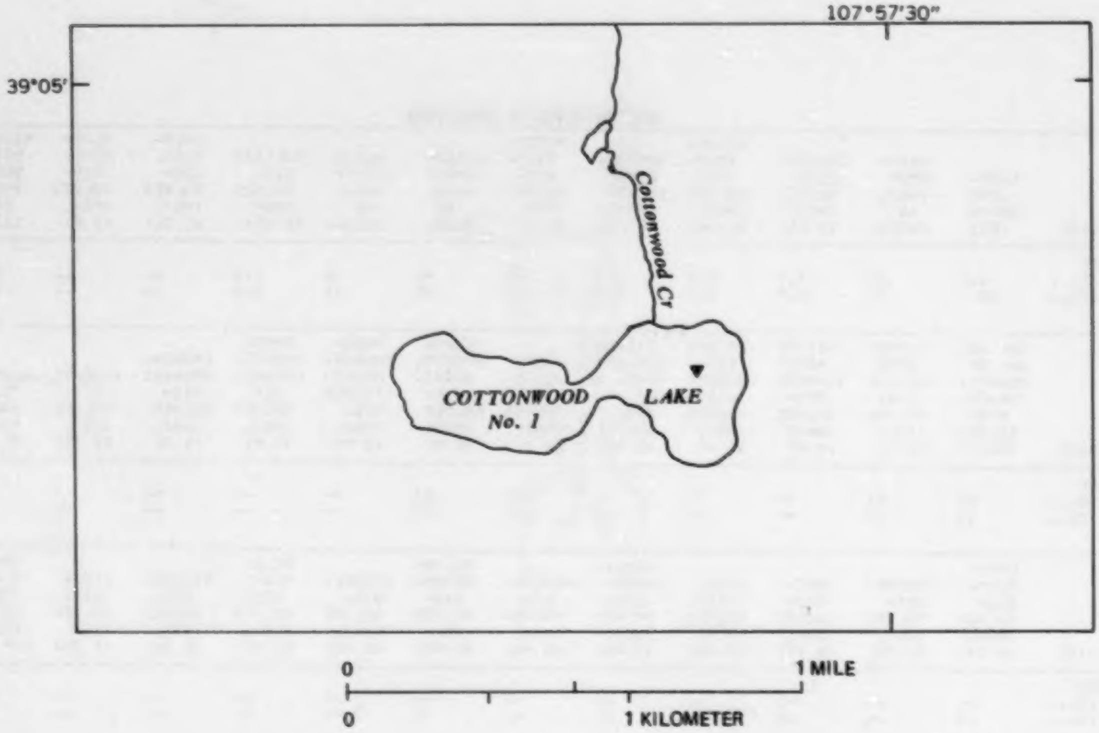
Storage capacity: 3,000 acre-ft

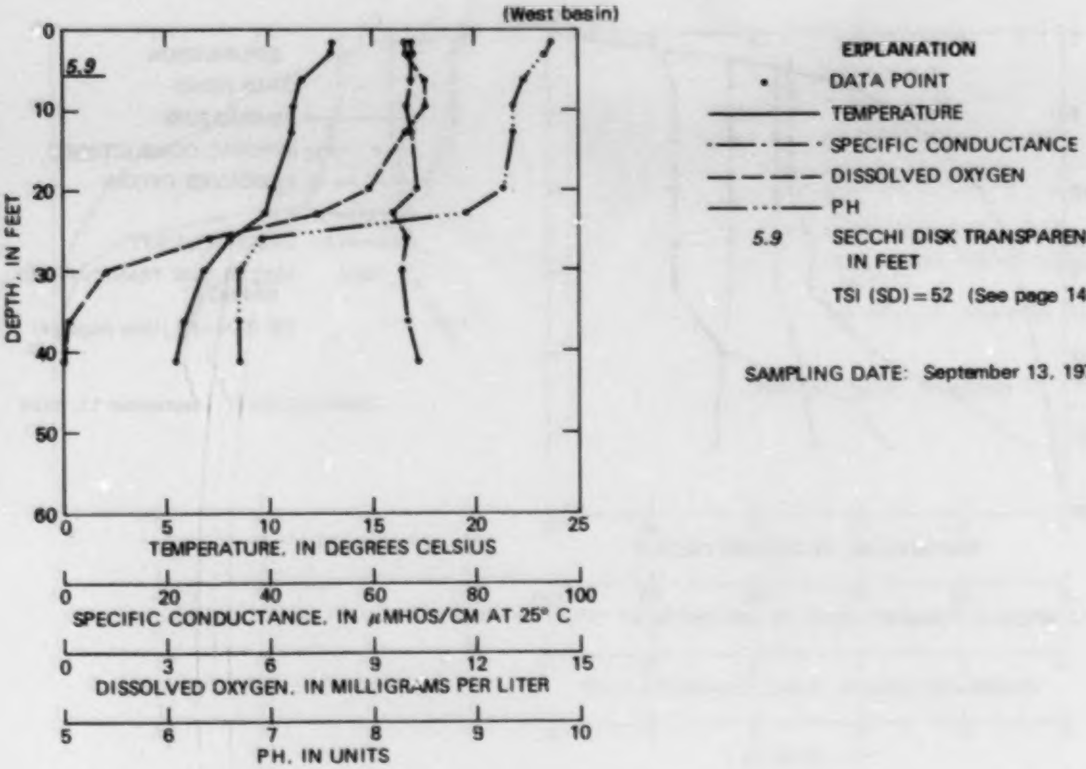
Surface area: 90 acres

Maximum depth: 40 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly, U.S. Bureau of Reclamation) (operated by Cottonwood Lakes Reservoir Company)

Principal uses: Irrigation, power, recreation.





TSI (SD) = 52 (See page 14)

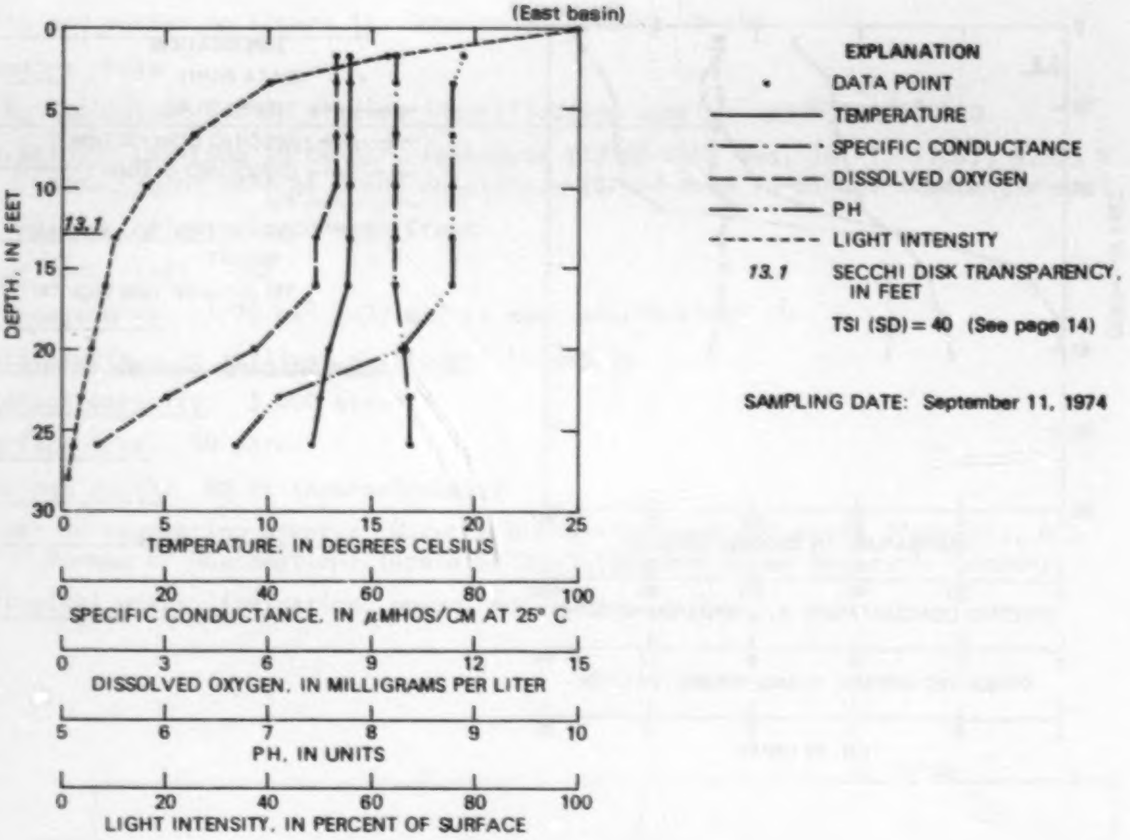
SAMPLING DATE: September 13, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
13...	1.6	29	8.6	1.8	1.3	1.4	44	36	.7	.1	.1	19
13...	41	28	8.0	1.9	1.0	1.4	37	38	1.6	.7	.1	18

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
13...	55	.01	--	--	--	.02	.03	--	--	--	--	--
13...	51	.00	--	--	--	.08	.08	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
13...	--	--	20	--	0	--	--	--	--	--	--	17000
13...	--	--	40	--	40	--	--	--	--	--	--	--

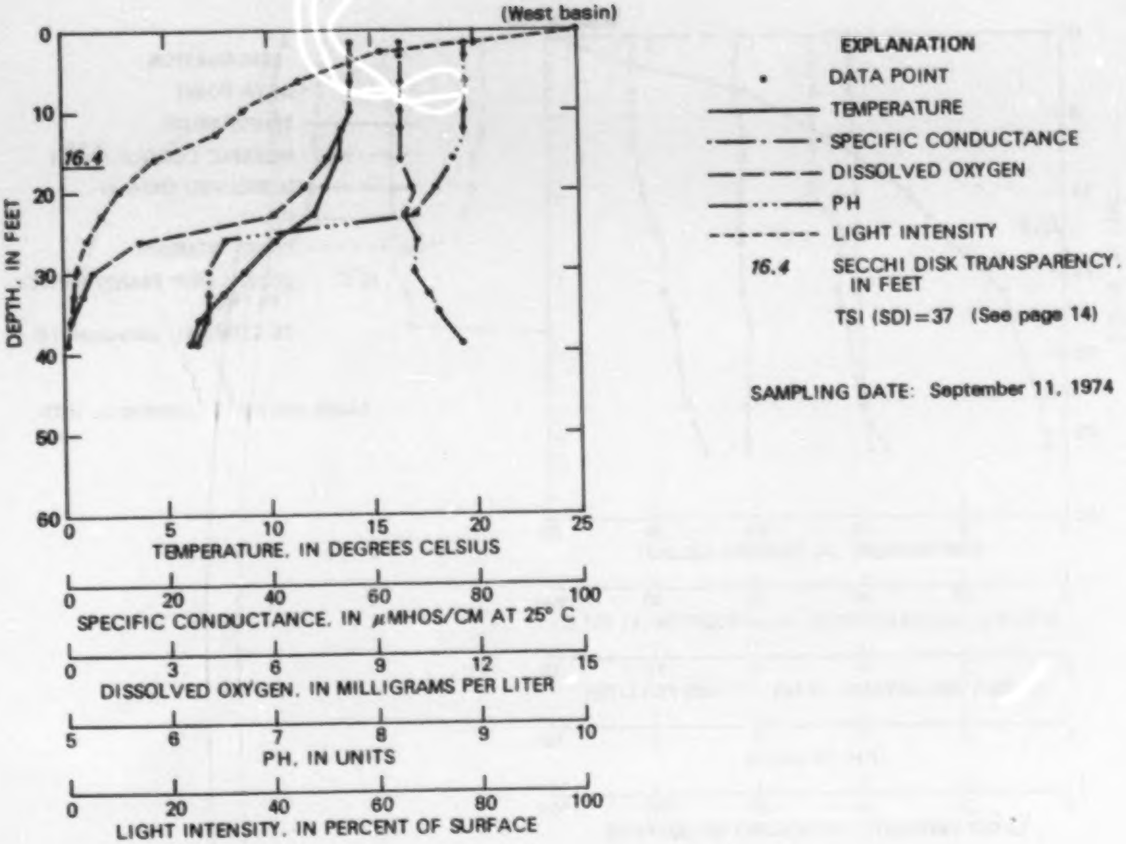


WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
11...	1.6	33	8.6	2.9	1.8	1.9	32	33	2.0	.1	.1	19
11...	26	36	8.5	3.6	1.7	2.0	41	34	2.3	.1	.1	19

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
11...	56	.00	.02	.24	.26	.01	.00	.03	.00	8.8	--	--
11...	58	.00	.07	.21	.28	.05	.03	.07	.00	12	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
11...	--	--	50	--	0	--	--	--	--	--	--	11000
11...	--	--	170	--	0	--	--	--	--	--	--	--



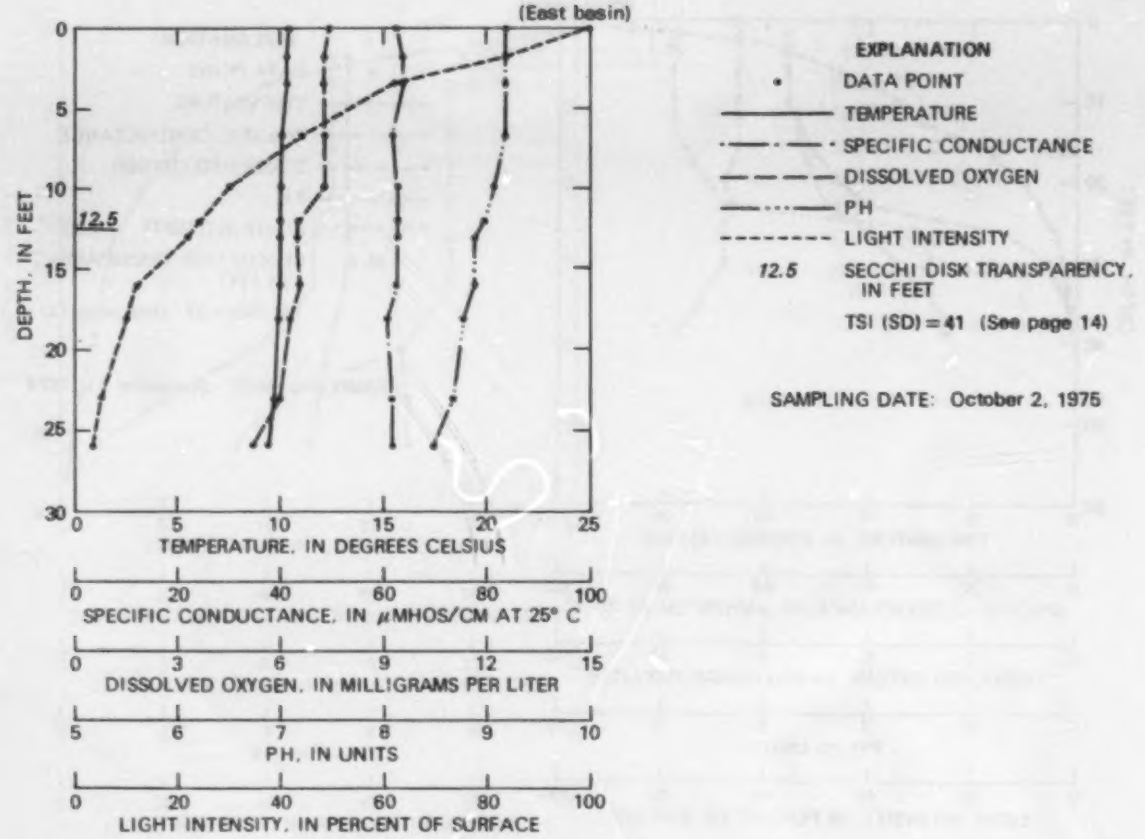
SAMPLING DATE: September 11, 1974

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
11...	1.6	32	8.8	2.4	1.6	1.9	30	33	2.0	.1	.1	19
11...	39	33	9.8	2.0	1.7	1.9	45	37	2.1	.1	.1	17

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
11...	56	.00	.02	.52	.54	.01	.00	.03	.00	36	--	--
11...	57	.00	.22	.16	.38	.08	.04	.04	.00	4.1	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
11...	--	--	40	--	0	--	--	--	--	--	--	6500
11...	--	--	80	--	30	--	--	--	--	--	--	--



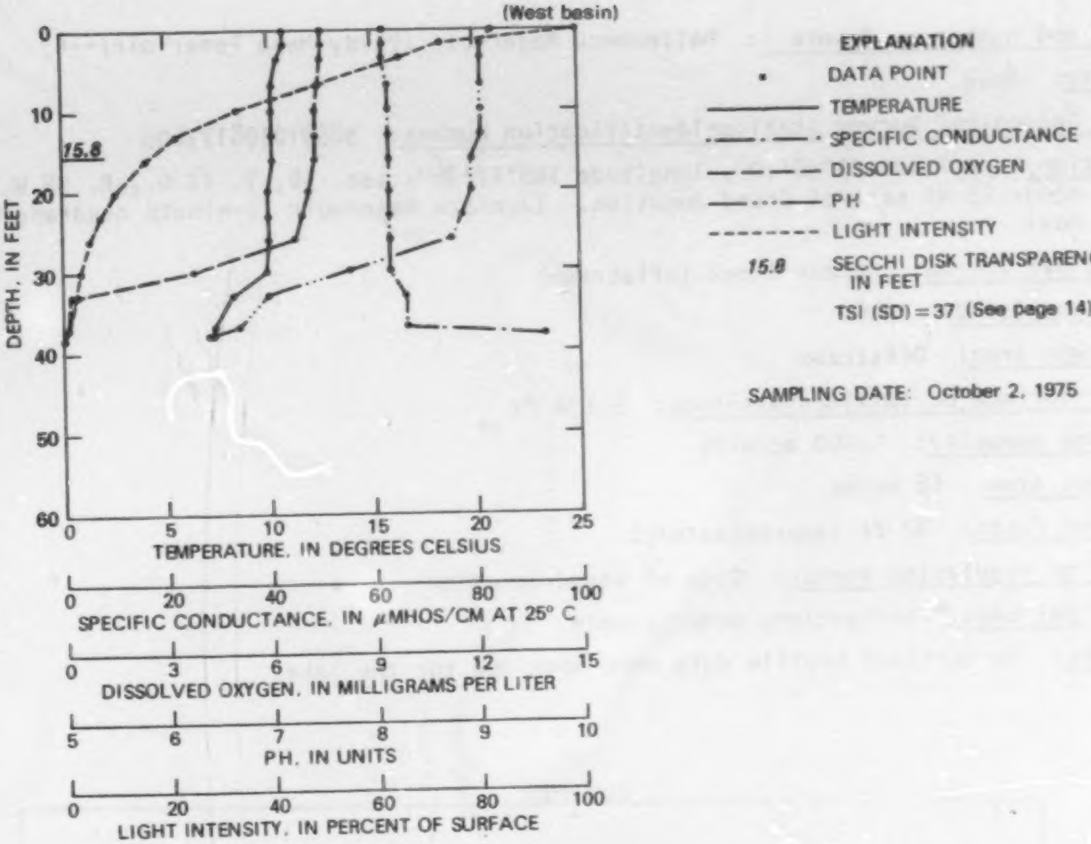
SAMPLING DATE: October 2, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT												
02...	1.6	28	8.0	2.0	1.4	1.6	39	32	1.8	.5	.1	17
02...	26	27	7.7	1.8	1.4	1.7	38	31	1.8	.5	.1	17

DATE	SOLIUS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
OCT												
02...	52	.02	.03	.19	.22	.00	.00	.01	.00	4.0	--	0
02...	51	.03	.07	.23	.30	.01	.01	.01	.00	3.7	--	0

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESF, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
OCT												
02...	--	2	10	0	10	--	--	1	--	--	10	4100
02...	--	1	0	0	10	--	--	2	--	--	10	--



SAMPLING DATE: October 2, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
OCT												
02...	1.6	28	7.9	1.9	1.4	1.6	27	34	2.2	.5	.1	16
02...	38	30	8.8	2.0	1.4	1.5	45	37	1.8	.5	.2	13

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
OCT												
02...	52	.03	.09	.21	.30	.01	.00	.01	.00	3.3	--	0
02...	53	.01	.74	.26	1.0	.11	.08	.03	.00	3.3	--	0

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
OCT												
02...	--	1	10	0	10	--	--	1	--	--	10	--
02...	--	0	20	0	60	--	--	2	--	--	10	--

Name and number on figure 1: Hallenbeck Reservoir (Purdy Mesa Reservoir)--47

County: Mesa

U.S. Geological Survey station-identification number: 385810108173600

Location: Latitude 38°58'10", longitude 108°17'36"; sec. 36, T. 12 S., R. 98 W.; about 25 mi east of Grand Junction. (Juniata Reservoir 7½-minute quadrangle map)

Principal inflow: Kannah Creek (offstream)

Year completed: 1946

Drainage area: Offstream

Water-surface or spillway altitude: 5,634 ft

Storage capacity: 1,100 acre-ft

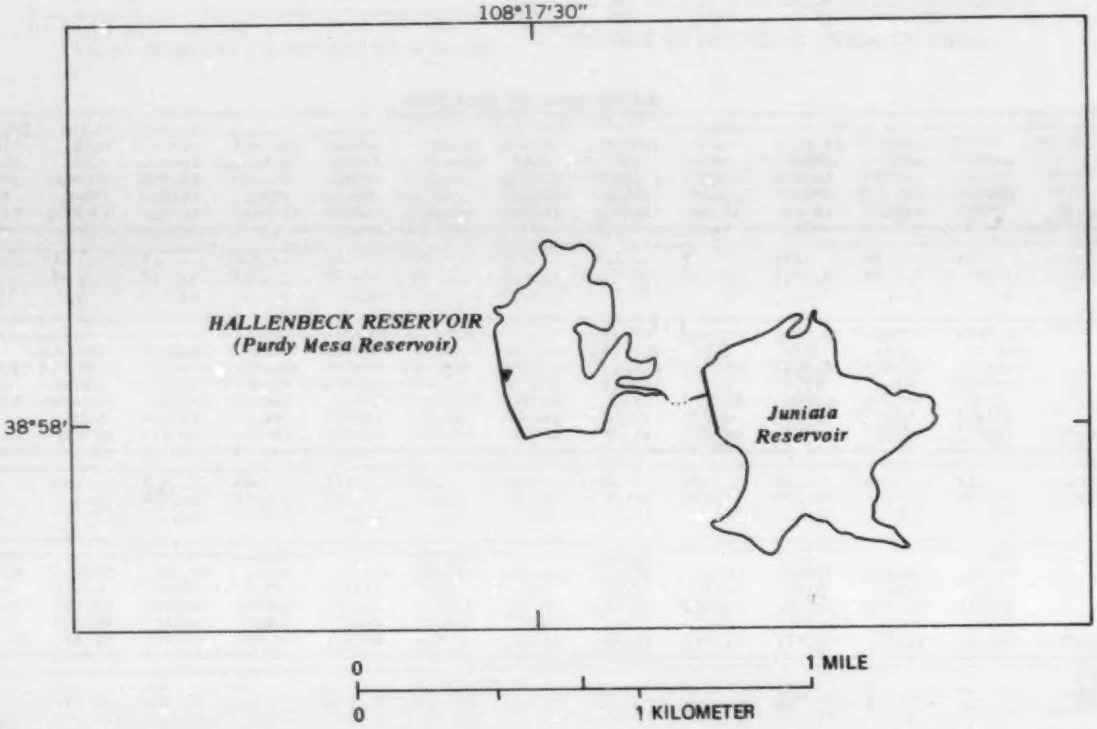
Surface area: 56 acres

Maximum depth: 32 ft (approximately)

Owner or regulating agency: City of Grand Junction

Principal uses: Irrigation, water supply.

Remarks: No vertical profile data were obtained for the lake.


108°17'30"
HALLENBECK RESERVOIR
(Purdy Mesa Reservoir)
38°58'
Juniata Reservoir
0
1 MILE
0
1 KILOMETER

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 14...	1.6	90	22	8.5	10	1.4	91	76	32	2.1	.1	17

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 14...	139	.00	--	--	--	.02	.03	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 14...	--	--	20	--	50	--	--	--	--	--	--	650

Name and number on figure 1: Juniata Reservoir--48

County: Mesa

U.S. Geological Survey station-identification number: 385803108170500

Location: Latitude 38°58'03", longitude 108°17'05"; sec. 31, T. 12 S., R. 97 W.; about 25 mi east of Grand Junction. (Juniata Reservoir 7½-minute quadrangle map)

Principal inflow: Kannah Creek (offstream)

Year completed: 1954

Drainage area: Offstream

Water-surface or spillway altitude: 5,716 ft

Storage capacity: 2,700 acre-ft

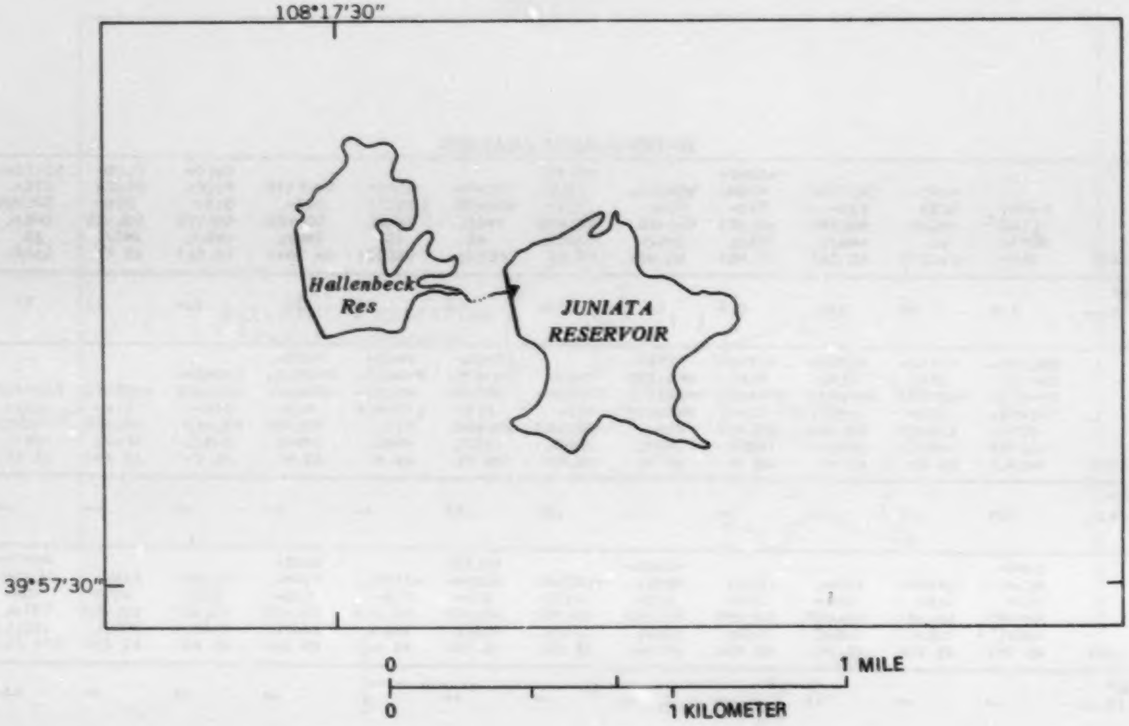
Surface area: 100 acres

Maximum depth: 87 ft

Owner or regulating agency: City of Grand Junction

Principal uses: Water supply only

Remarks: No vertical profile data were obtained for the lake.


108°17'30"
Hallenbeck Res
JUNIATA RESERVOIR
39°57'30"
0
1 MILE
0
1 KILOMETER

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 14...	1.6	150	37	13	15	1.7	117	99	79	2.0	.1	15

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 14...	223	.00	--	--	--	.01	.02	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 14...	--	--	10	--	0	--	--	--	--	--	--	160

Name and number on figure 1: Vega Reservoir--49

County: Mesa

U.S. Geological Survey station-identification number: 09096100

Location: Latitude 39°13'30", longitude 107°48'40"; sec. 6, T. 10 S., R. 93 W.; about 10 mi southeast of Collbran and 45 mi northeast of Grand Junction. (The Meadows 7½-minute quadrangle map)

Principal inflow: Plateau Creek

Year completed: 1959

Drainage area: 24.4 mi^2

Water-surface or spillway altitude: 7,984 ft

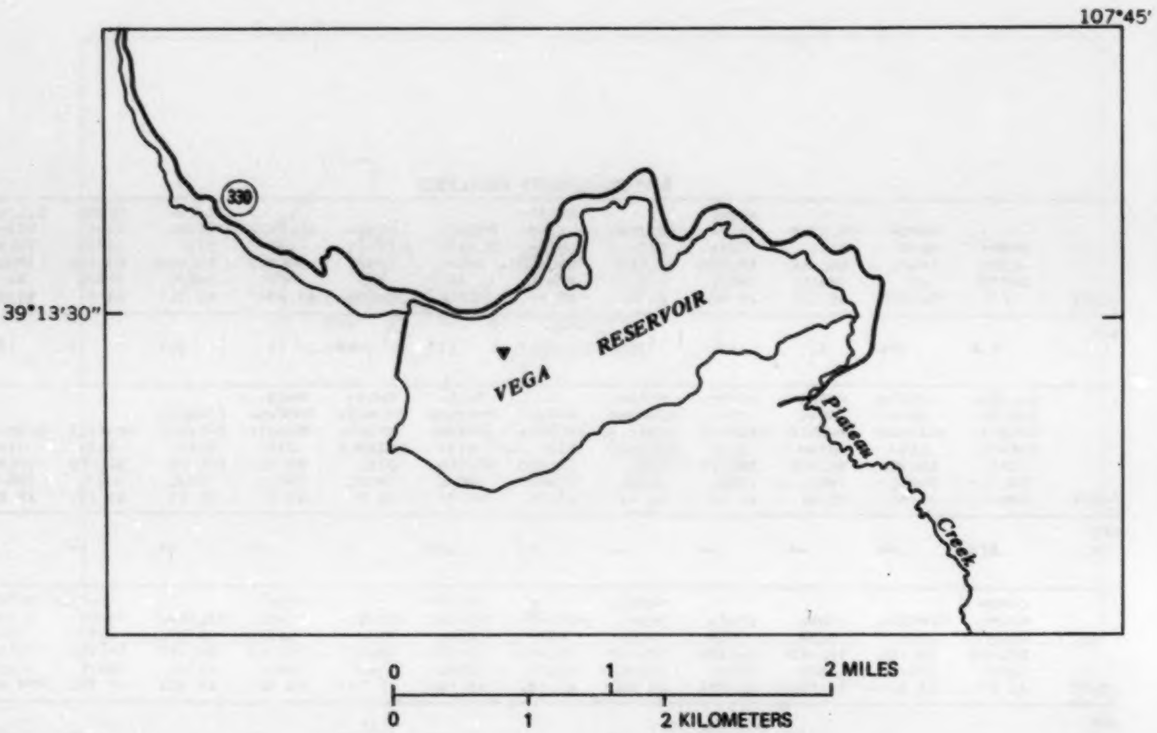
Storage capacity: 32,930 (usable); 823 (dead) acre-ft

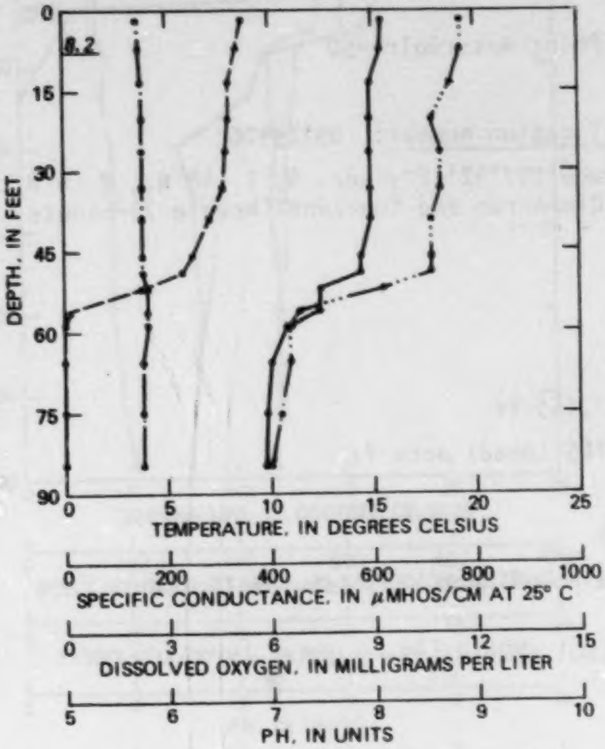
Surface area: 1,000 acres

Maximum depth: 85 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly, U.S. Bureau of Reclamation) (operated by Collbran Water Conservancy District)

Principal uses: Irrigation, power development, recreation (fishing, camping-campgrounds, boating-ramps).





SAMPLING DATE: September 12, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 12...	1.6	69	21	4.1	2.9	1.1	93	76	3.6	.2	.1	11
12...	85	72	22	4.1	2.7	1.1	94	77	4.5	1.1	.1	13

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 12...	90	.00	--	--	--	.04	.04	--	--	--	--	--
12...	97	.00	--	--	--	.16	.19	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 12...	--	--	80	--	60	--	--	--	--	--	--	36000
12...	--	--	630	--	970	--	--	--	--	--	--	--

Name and number on figure 1: Morrow Point Reservoir--50

County: Montrose

U.S. Geological Survey station-identification number: 09125400

Location: Latitude 38°27'05", longitude 107°32'12"; sec. 4, T. 48 N., R. 6 W.; about 15 mi east of Montrose. (Cimmarron and Cuercanti Needle $7\frac{1}{2}$-minute quadrangle maps)

Principal inflow: Gunnison River

Year completed: 1956

Drainage area: 3,637 mi^2

Water-surface or spillway altitude: 7,165 ft

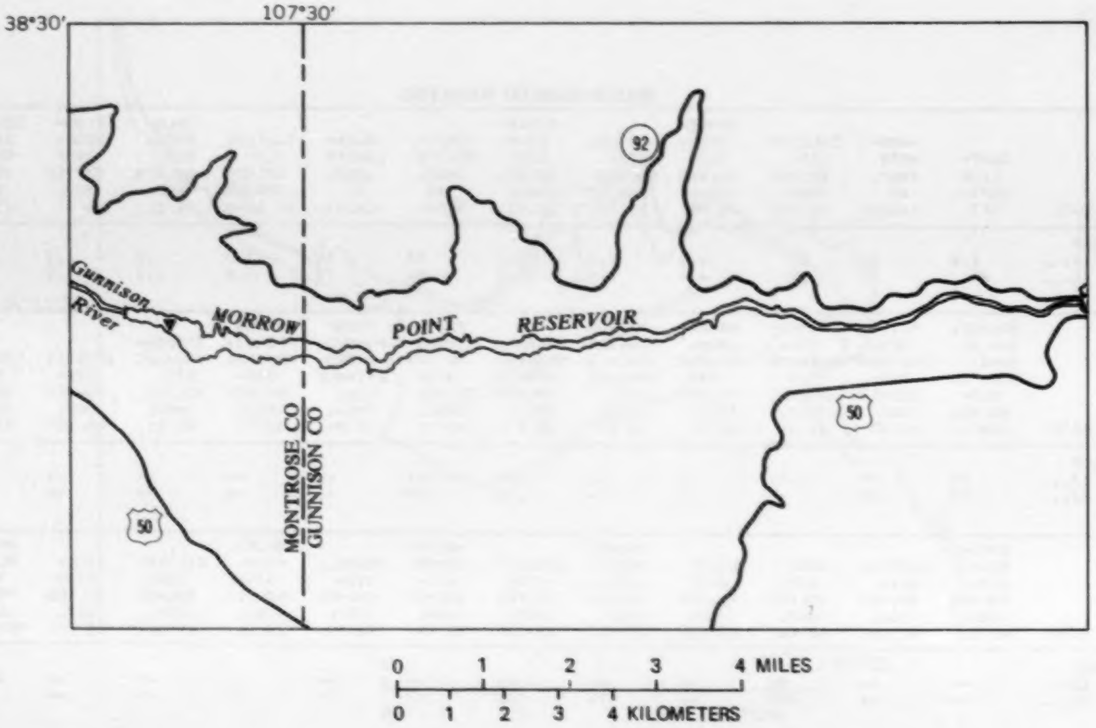
Storage capacity: 121,200 (usable); 165 (dead) acre-ft

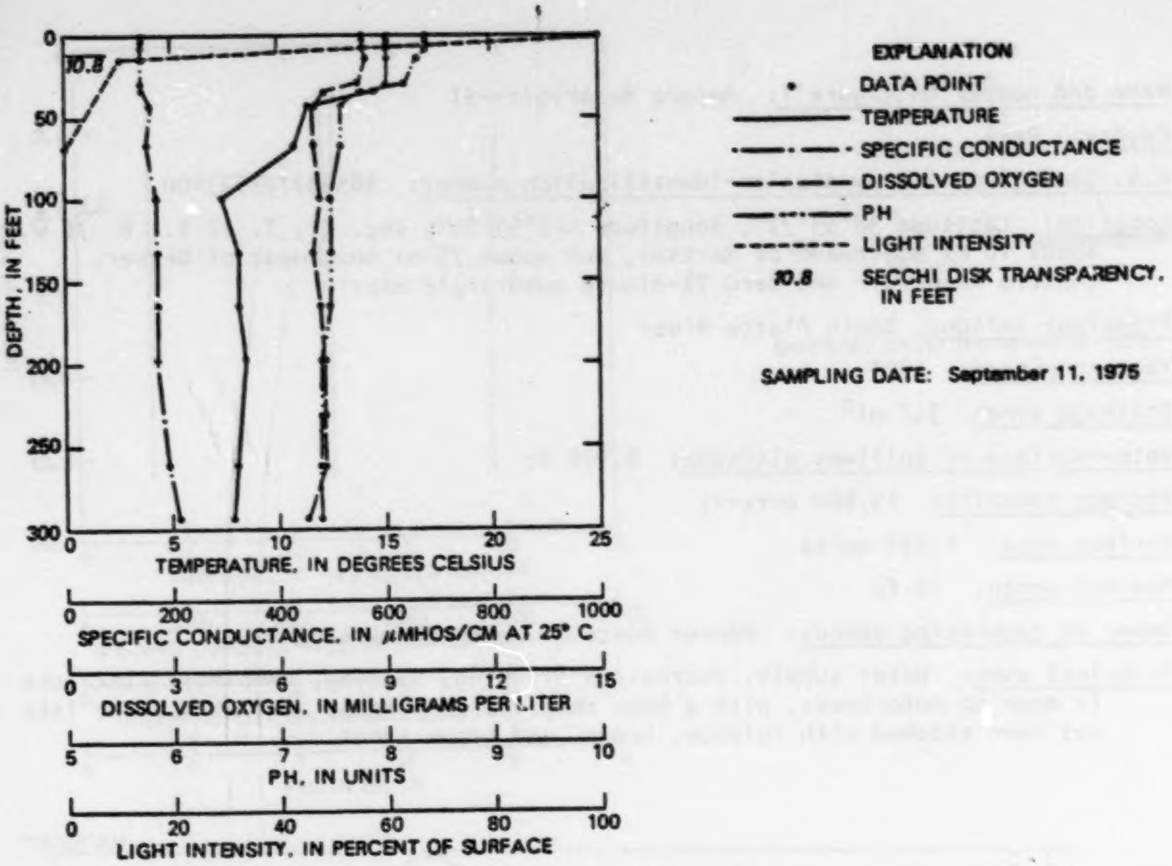
Surface area: 800 acres

Maximum depth: 300 ft (approximately)

Owner or regulating agency: Water and Power Resources Service (formerly, U.S. Bureau of Reclamation)

Principal uses: Power development. (Not open to the public).


38°30'
107°30'
Gunnison River
MORROW POINT RESERVOIR
92
50
50
MONTROSE CO
GUNNISON CO
0 1 2 3 4 MILES
0 1 2 3 4 KILOMETERS



SAMPLING DATE: September 11, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
11...	1.6	56	17	3.4	2.6	1.8	62	51	12	1.5	.2	14
11...	295	95	28	6.1	4.9	1.9	109	89	17	1.9	.2	13

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
11...	83	.01	.22	.12	.34	.01	.00	.01	.00	6.1	--	--
11...	128	.18	.00	.30	.30	.03	.01	.02	.00	4.6	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
11...	--	--	20	--	0	--	--	--	--	--	--	5500
11...	--	--	10	--	10	--	--	--	--	--	--	--

Name and number on figure 1: Antero Reservoir--51

County: Park

U.S. Geological Survey station-identification number: 385937105533400

Location: Latitude 38°59'37", longitude 105°53'34"; sec. 21, T. 12 S., R. 76 W.; about 10 mi southwest of Hartsel, and about 75 mi southwest of Denver. (Antero Reservoir and Garo 7½-minute quadrangle maps)

Principal inflow: South Platte River

Year completed: 1909

Drainage area: 337 mi^2

Water-surface or spillway altitude: 8,978 ft

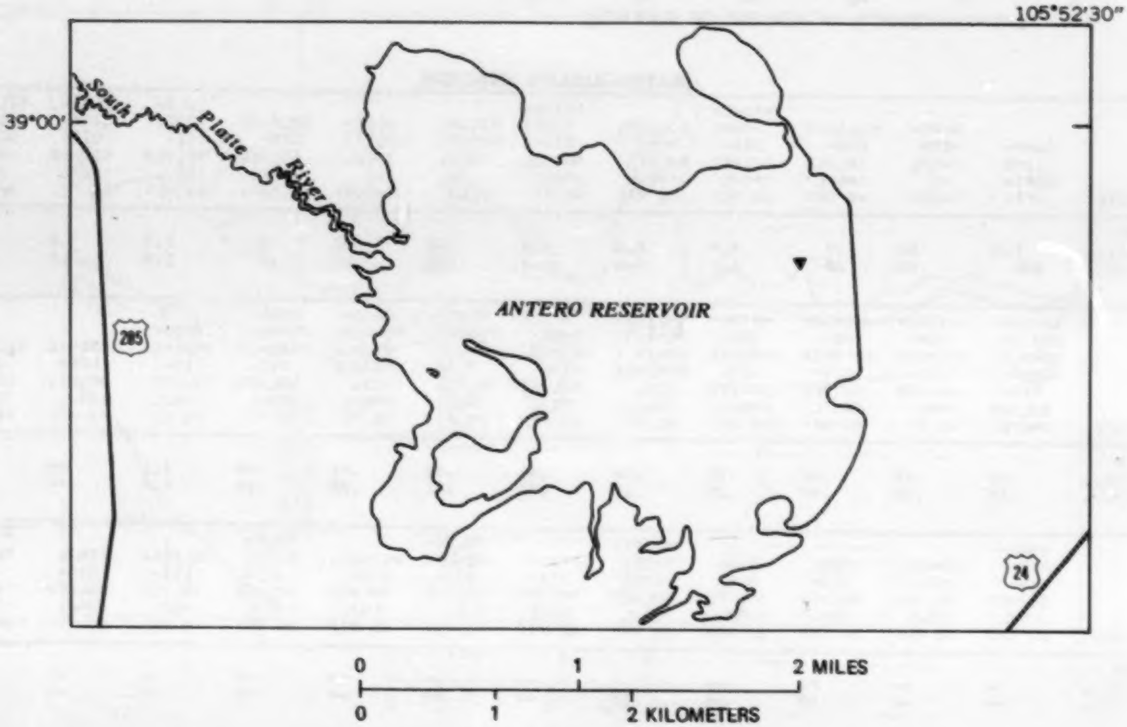
Storage capacity: 15,880 acre-ft

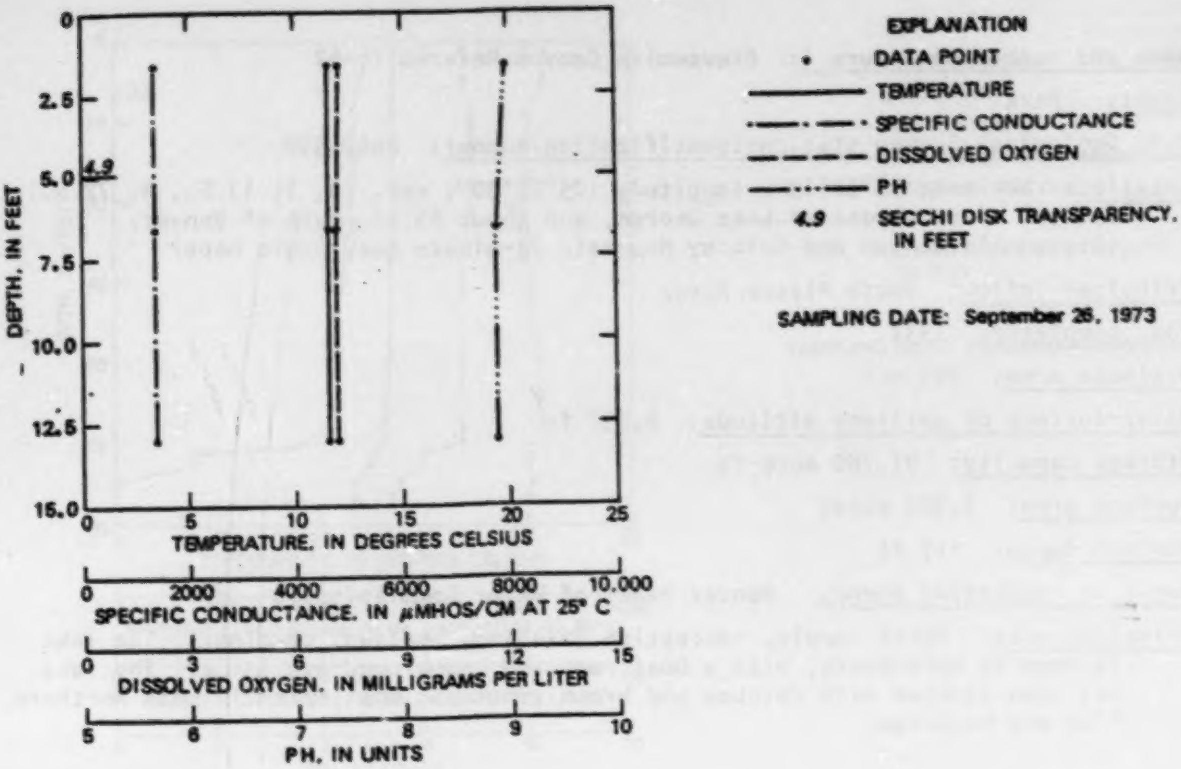
Surface area: 1,930 acres

Maximum depth: 16 ft

Owner or regulating agency: Denver Board of Water Commissioners

Principal uses: Water supply, recreation (fishing, boating, camping). The lake is open to motorboats, with a boat ramp and campground available. The lake has been stocked with rainbow, brown, and brook trout.





SAMPLING DATE: September 26, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 26...	1.6	260	50	32	190	3.8	105	86	170	290	.3	3.7
26...	13	260	50	33	190	3.7	104	85	180	290	.2	4.1

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 26...	792	.03	--	--	--	.04	--	--	--	--	--	--
26...	802	.02	--	--	--	.01	--	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 26...	--	--	30	--	17	--	--	--	--	--	--	1000
26...	--	--	20	--	24	--	--	--	--	--	--	--

Name and number on figure 1: Elevenmile Canyon Reservoir--52

County: Park

U.S. Geological Survey station-identification number: 06695500

Location: Latitude 38°54'19", longitude 105°28'30"; sec. 20, T. 13 S., R. 72 W.; about 8 mi southwest of Lake George, and about 65 mi south of Denver. (Elevenmile Canyon and Spinney Mountain 7½-minute quadrangle maps)

Principal inflow: South Platte River

Year completed: 1932

Drainage area: 963 mi^2

Water-surface or spillway altitude: 8,597 ft

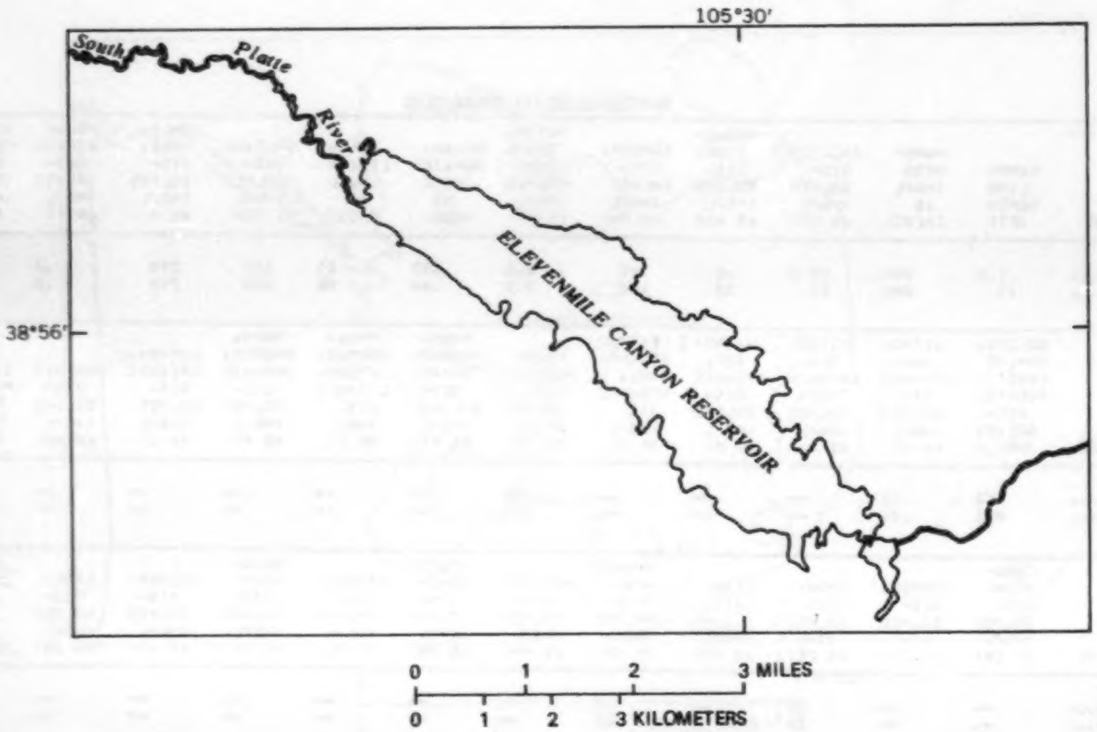
Storage capacity: 97,780 acre-ft

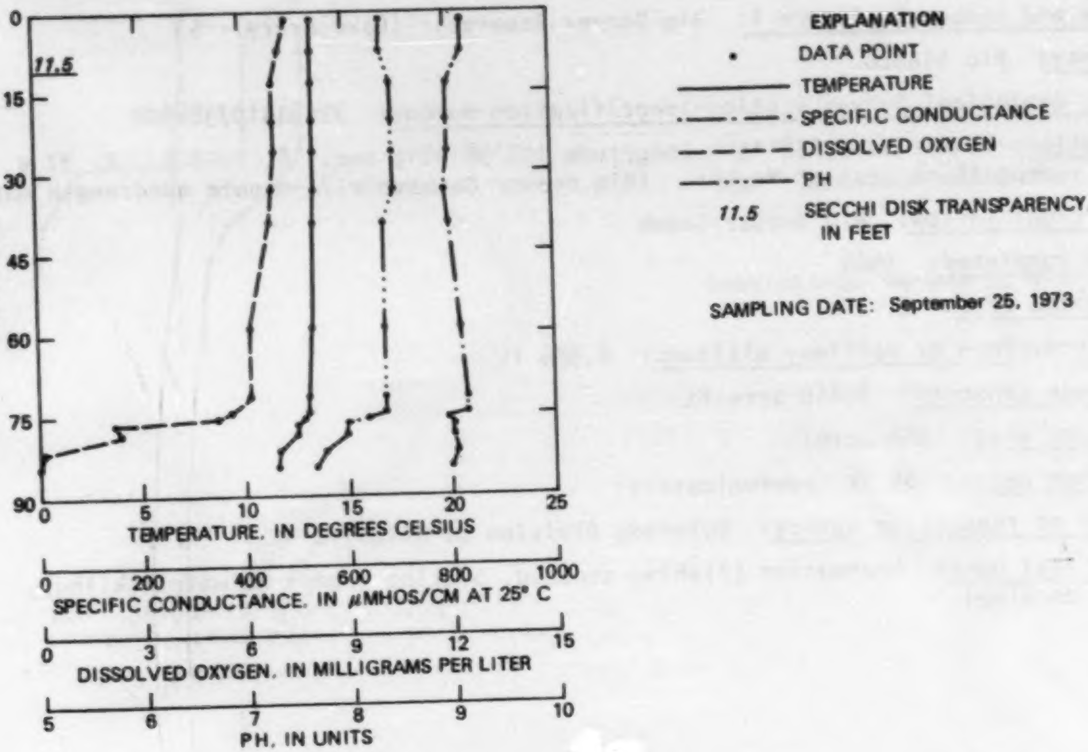
Surface area: 3,320 acres

Maximum depth: 117 ft

Owner or regulating agency: Denver Board of Water Commissioners

Principal uses: Water supply, recreation (fishing, boating, camping). The lake is open to motorboats, with a boat ramp and campground available. The lake has been stocked with rainbow and brown trout and most recently with Northern Pike and Mackinaw.





SAMPLING DATE: September 25, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS,K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 25...	1.6	250	55	27	78	3.1	192	157	110	110	.5	6.2
25...	85	260	57	28	80	3.2	198	162	100	110	.3	6.6

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 25...	485	.10	--	--	--	.01	--	--	--	--	--	--
25...	483	.09	--	--	--	.02	--	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 25...	--	--	40	--	17	--	--	--	--	--	--	200
25...	--	--	70	--	220	--	--	--	--	--	--	--

Name and number on figure 1: Big Beaver Reservoir (Lake Avery)--53

County: Rio Blanco

U.S. Geological Survey station-identification number: 395813107384800

Location: Latitude 39°58'13", longitude 107°38'48"; sec. 18, T. 1 S., R. 91 W.; about 15 mi east of Meeker. (Big Beaver Reservoir 7½-minute quadrangle map)

Principal inflow: Big Beaver Creek

Year completed: 1964

Drainage area: 21.7 mi^2

Water-surface or spillway altitude: 6,995 ft

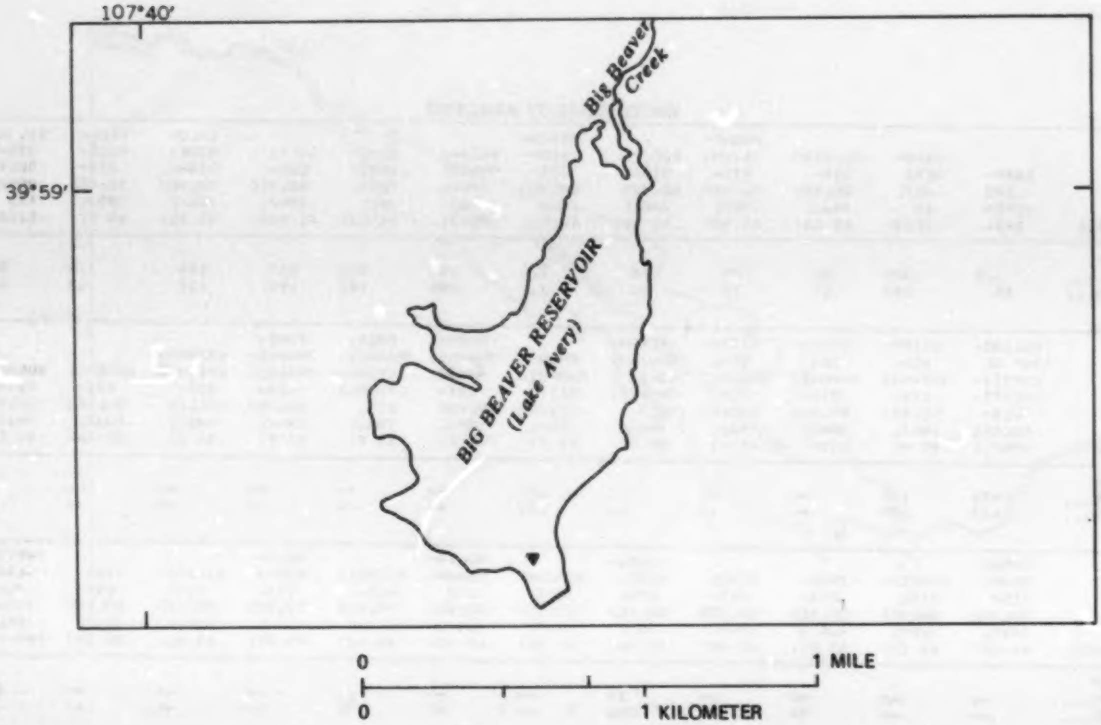
Storage capacity: 7,660 acre-ft

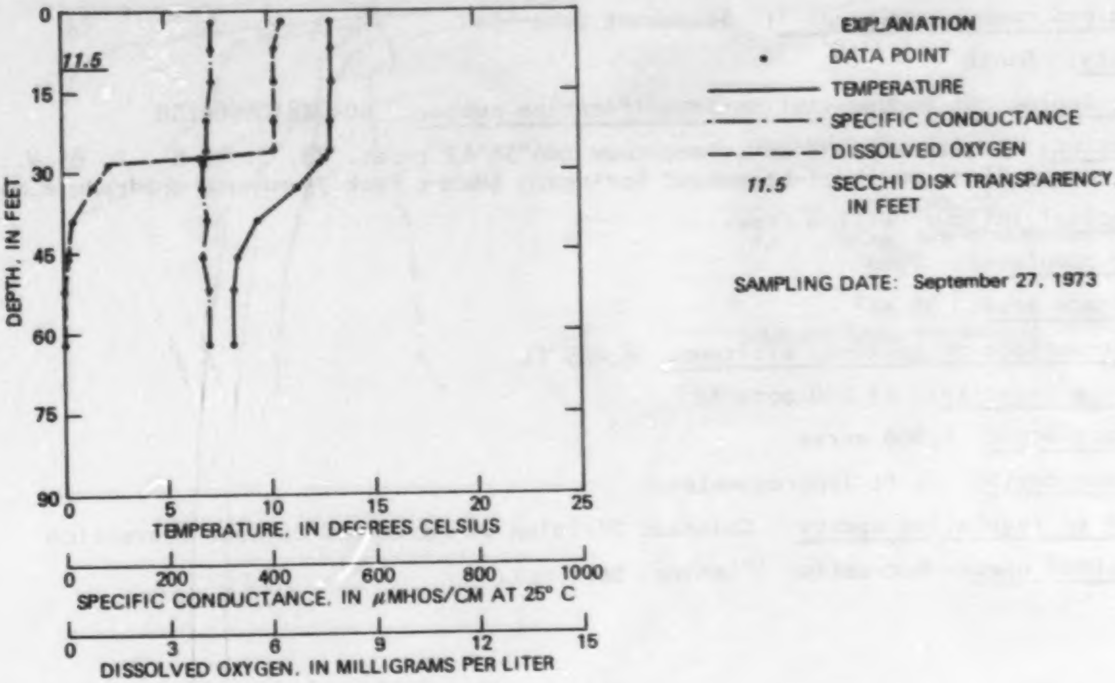
Surface area: 260 acres

Maximum depth: 65 ft (approximately)

Owner or regulating agency: Colorado Division of Wildlife

Principal uses: Recreation [fishing-stocked, boating (ramps-no water skiing), camping].


107°40'
39°59'
Big Beaver Creek
BIG BEAVER RESERVOIR (Lake Avery)
0
1 MILE
0
1 KILOMETER



SAMPLING DATE: September 27, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
27...	1.6	140	41	10	5.0	1.0	111	91	57	2.5	.3	9.0
27...	62	140	41	8.2	3.3	1.3	123	101	36	3.4	.3	12

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
27...	181	.01	--	--	--	.02	--	--	--	--	--	--
27...	167	.01	--	--	--	.11	--	--	--	--	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
27...	--	--	30	--	70	--	--	--	--	--	--	10000
27...	--	--	70	--	300	--	--	--	--	--	--	--

Name and number on figure 1: Steamboat Lake--54

County: Routt

U.S. Geological Survey station-identification number: 404728106564200

Location: Latitude 40°47'28", longitude 106°56'42"; sec. 29, T. 10 N., R. 85 W.; about 25 mi north of Steamboat Springs. (Hahns Peak 7½-minute quadrangle map)

Principal inflow: Willow Creek

Year completed: 1966

Drainage area: 36 mi^2

Water-surface or spillway altitude: 8,035 ft

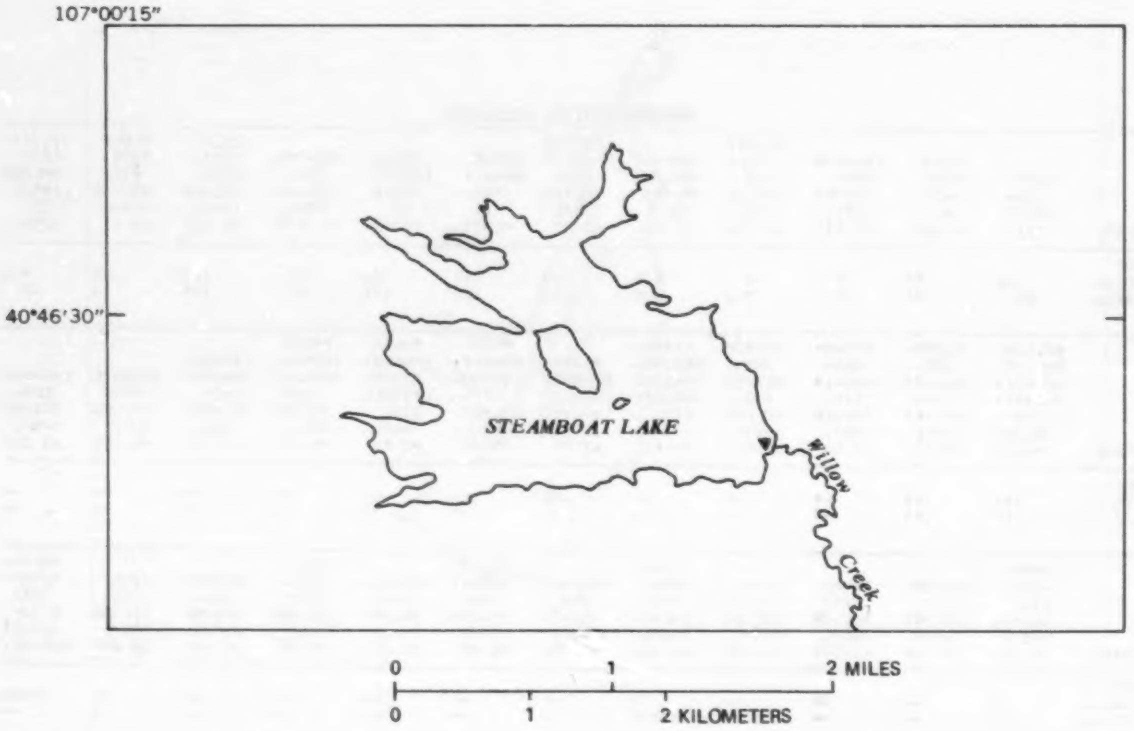
Storage capacity: 23,000 acre-ft

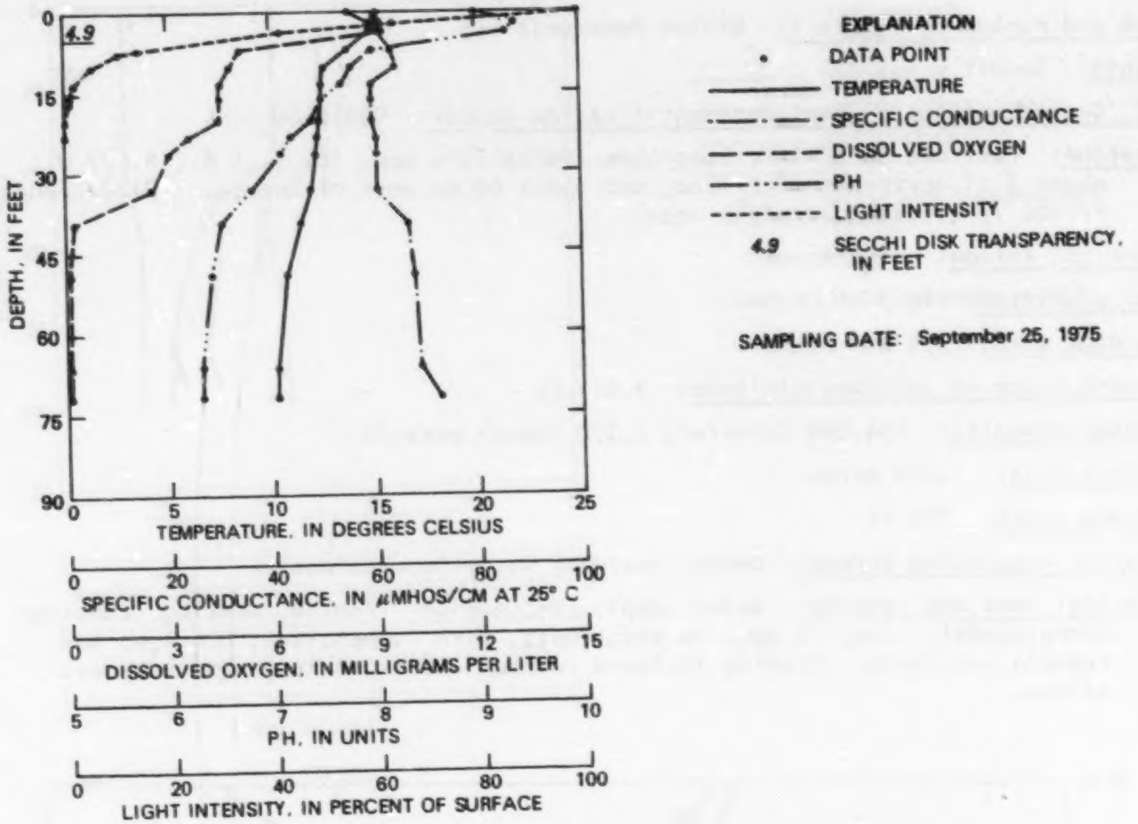
Surface area: 1,000 acres

Maximum depth: 75 ft (approximately)

Owner or regulating agency: Colorado Division of Parks and Outdoor Recreation

Principal uses: Recreation (fishing, boating).


107°00'15"
40°46'30"
STEAMBOAT LAKE
Willow
Creek
0
1
2 MILES
0
1
2 KILOMETERS



SAMPLING DATE: September 25, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP												
25...	1.6	32	9.2	2.2	1.9	1.1	34	30	3.7	.7	.1	11
25...	72	31	8.5	2.3	1.8	.8	40	33	3.5	.7	.1	13

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP												
25...	48	.08	.04	.26	.30	.01	.00	.01	.00	7.4	--	--
25...	52	.03	.62	.35	.97	.16	.21	.04	.00	9.4	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP												
25...	--	--	50	--	10	--	--	--	--	--	10	1900
25...	--	--	--	--	360	--	--	--	--	--	10	--

Name and number on figure 1: Dillon Reservoir--55

County: Summit

U.S. Geological Survey station-identification number: 09050600

Location: Latitude 39°37'14", longitude 106°03'53"; sec. 18, T. 5 S., R. 77 W.; about 3 mi northeast of Frisco, and about 60 mi west of Denver. (Dillon and Frisco 7½-minute quadrangle maps)

Principal inflow: Blue River

Year completed: 1963

Drainage area: 335 mi^2

Water-surface or spillway altitude: 9,017 ft

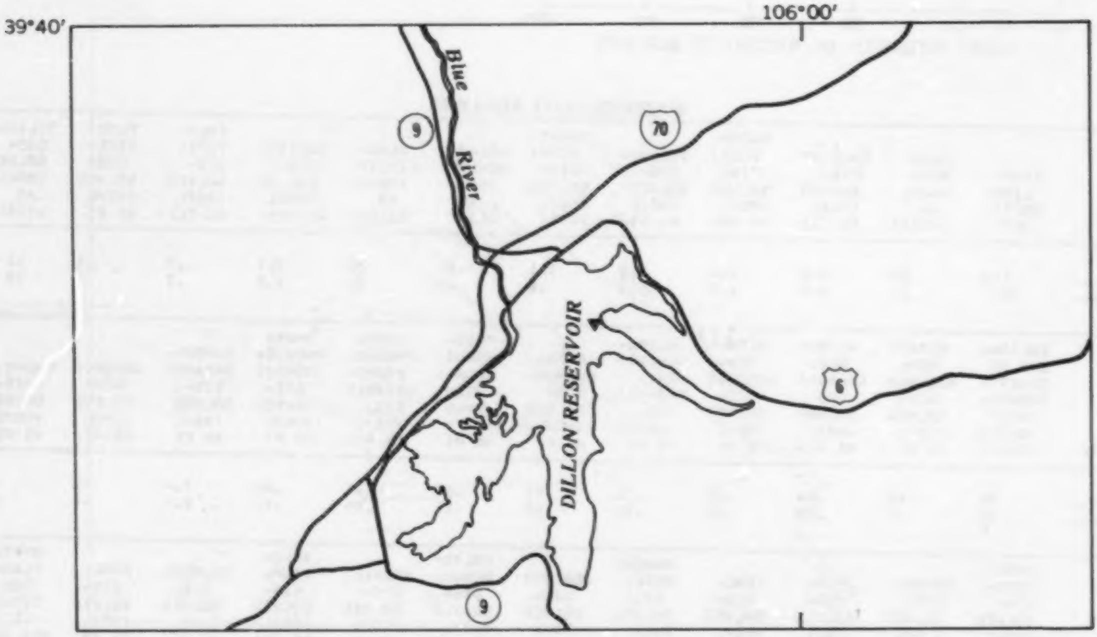
Storage capacity: 254,000 (usable); 3,270 (dead) acre-ft

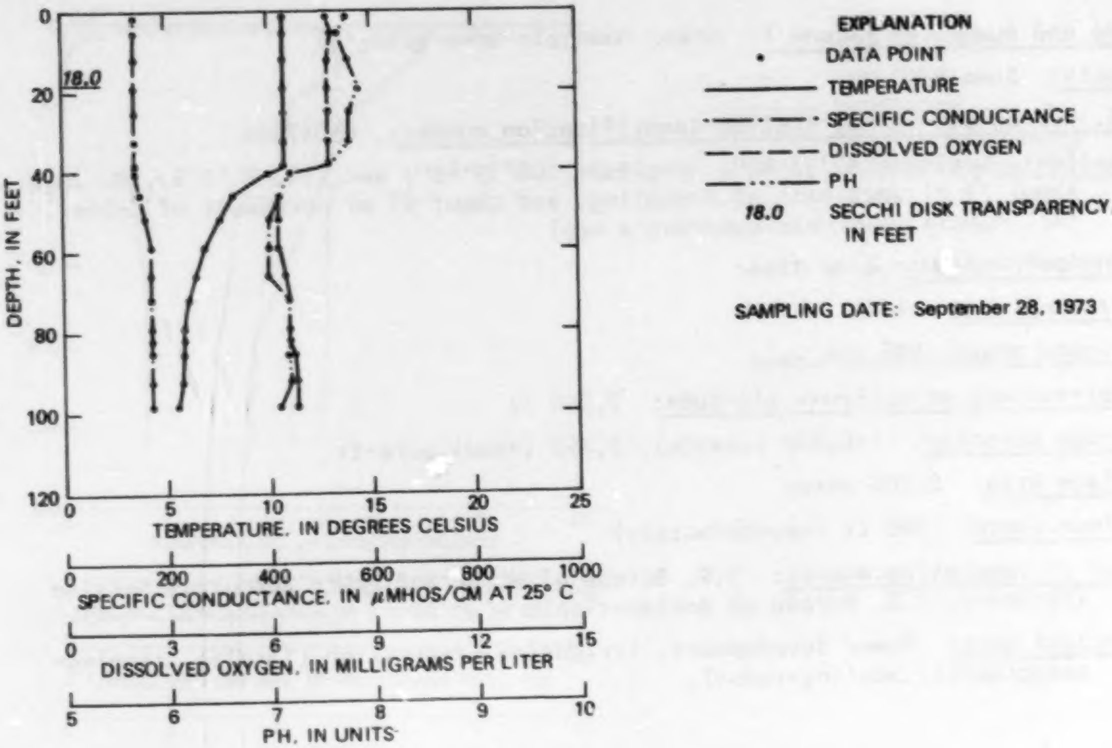
Surface area: 3,220 acres

Maximum depth: 188 ft

Owner or regulating agency: Denver Board of Water Commissioners

Principal uses and remarks: Water supply, recreation (fishing, boating, camping-campgrounds). Lake is open to motorboats, with launchsites, moorage, and rentals available. Fishing includes rainbow and brown trout and kokanee salmon.





SAMPLING DATE: September 28, 1973

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
SEP 28...	1.6	60	19	3.0	3.2	1.5	45	37	28	2.1	.4	6.0
28...	82	66	21	3.2	4.7	2.0	46	38	36	2.1	.5	6.3

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
SEP 28...	86	.03	--	--	--	.04	.01	--	--	--	2	1
28...	100	.16	--	--	--	.01	.02	--	--	--	0	1

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
SEP 28...	0	4	40	2	24	.0	94	1	4	0	40	510
28...	0	2	20	1	24	.1	400	1	4	0	70	--

Name and number on figure 1: Green Mountain Reservoir--56

County: Summit

U.S. Geological Survey station-identification number: 09057000

Location: Latitude 39°52'42", longitude 106°19'45"; sec. 14, T. 1 S., R. 79 W.; about 13 mi southeast of Kremmling, and about 65 mi northwest of Denver. (Mt. Powell 15-minute quadrangle map)

Principal inflow: Blue River

Year completed: 1943

Drainage area: 598 mi^2

Water-surface or spillway altitude: 7,950 ft

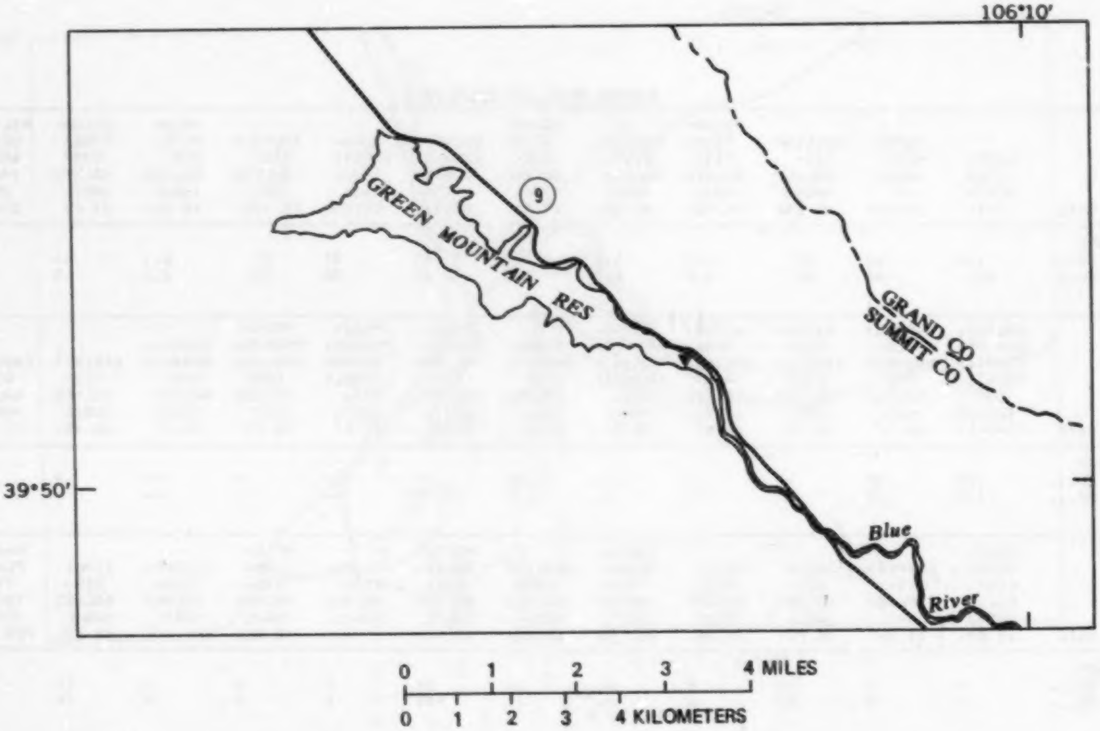
Storage capacity: 146,900 (usable); 7,760 (dead) acre-ft

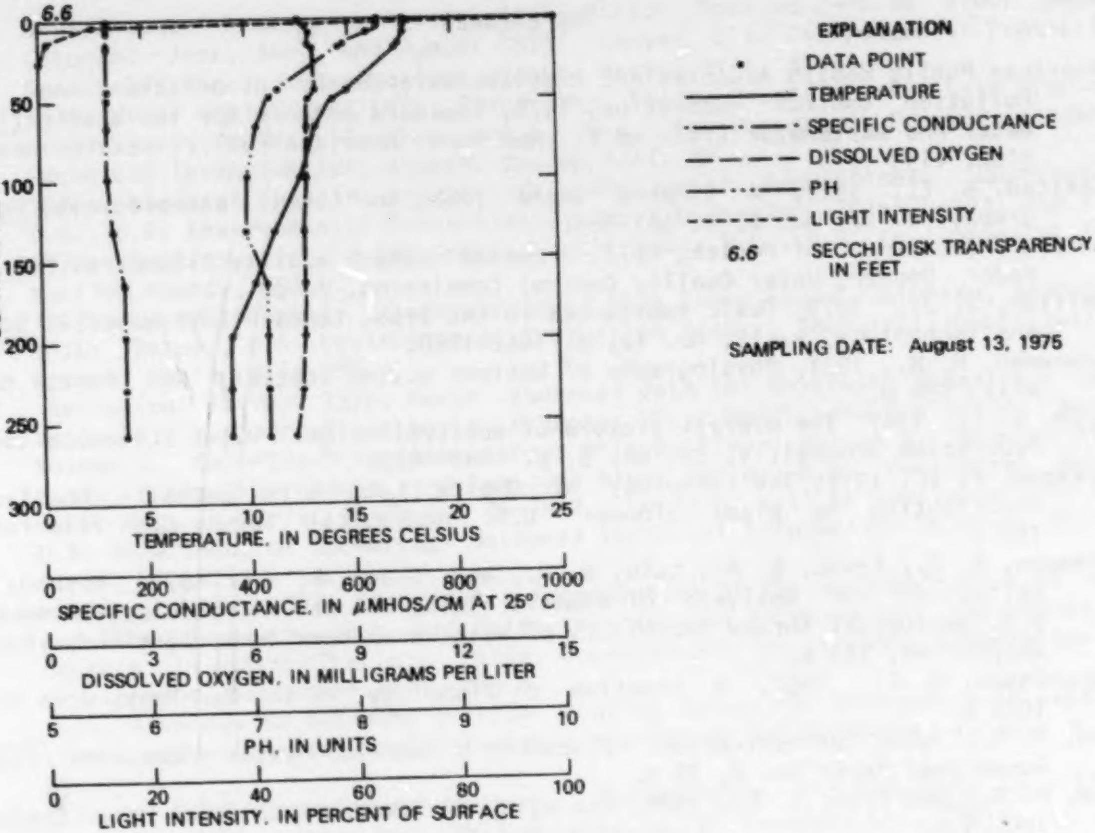
Surface area: 2,100 acres

Maximum depth: 260 ft (approximately)

Owner or regulating agency: U.S. Bureau of Water and Power Resources Service (formerly, U.S. Bureau of Reclamation)

Principal uses: Power development, irrigation, recreation (fishing, camping-campgrounds, boating-ramps).


106°10'
GREEN MOUNTAIN RES
9
GRAND CO
SUMMIT CO
39°50'
Blue
River
0 1 2 3 4 MILES
0 1 2 3 4 KILOMETERS



SAMPLING DATE: August 13, 1975

WATER-QUALITY ANALYSIS

DATE	SAMPLING DEPTH (FT)	HARDNESS (MG/L AS CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	POTASSIUM, DISSOLVED (MG/L AS K).	BICARBONATE (MG/L AS HCO3)	ALKALINITY (MG/L AS CACO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)
AUG												
13...	1.6	55	17	3.0	2.9	1.3	55	45	23	1.5	.2	3.7
13...	259	72	23	3.6	4.1	1.7	62	51	31	1.6	.3	5.8

DATE	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA DISSOLVED (MG/L AS N)	NITROGEN, ORGANIC DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC DIS. (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, HYDROLYZABLE DIS. (MG/L AS P)	PHOSPHORUS, ORGANIC DISSOLVED (MG/L AS P)	CARBON, ORGANIC DISSOLVED (MG/L AS C)	ARSENIC DISSOLVED (UG/L AS AS)	CADMIUM DISSOLVED (UG/L AS CD)
AUG												
13...	80	.03	.00	.16	.16	.02	.00	.02	.00	3.2	--	--
13...	107	1.1	.00	.21	.21	.02	.00	.02	.00	4.9	--	--

DATE	CHROMIUM, DISSOLVED (UG/L AS CR)	COPPER, DISSOLVED (UG/L AS CU)	IRON, DISSOLVED (UG/L AS FE)	LEAD, DISSOLVED (UG/L AS PB)	MANGANESE, DISSOLVED (UG/L AS MN)	MERCURY DISSOLVED (UG/L AS HG)	MOLYBDENUM, DISSOLVED (UG/L AS MO)	NICKEL, DISSOLVED (UG/L AS NI)	SELENIUM, DISSOLVED (UG/L AS SE)	SILVER, DISSOLVED (UG/L AS AG)	ZINC, DISSOLVED (UG/L AS ZN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
AUG												
13...	--	--	10	--	0	--	--	--	--	--	--	2000
13...	--	--	30	--	310	--	--	--	--	--	--	--

REFERENCES

American Public Health Association, American Water Works Association, and Water Pollution Control Federation, 1976, Standard methods for the examination of water and wastewater (14th ed.): New York, American Public Health Association, 1193 p.

Carlson, R. E., 1977, A trophic state index for lakes: Limnology and Oceanography, v. 22, no. 2, p. 361-369.

Colorado Department of Health, 1977, Proposed water quality standards for Colorado: Denver, Water Quality Control Commission, 20 p.

Delfino, J. J., 1979, Toxic substances in the Great Lakes: Environmental Science and Technology, v. 13, no. 12, p. 1462-1468.

Fenneman, N. M., 1931, Physiography of Western United States: New York, McGraw Hill, 534 p.

Fruh, G. E., 1967, The overall picture of eutrophication: Water Pollution Control Federation Journal, v. 39, no. 9, p. 1449-1463.

Greeson, P. E., 1971, The limnology of Oneida Lake with emphasis on factors contributing to algal blooms: U.S. Geological Survey open-file report, 185 p.

Greeson, P. E., Irwin, G. A., Luim, B. W., and Slack, K. V., 1977, Methods for collection and analysis of aquatic biological and microbiological samples: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter A4, 332 p.

Hutchinson, G. E., 1957, A treatise on limnology, v. 1: New York, John Wiley, 1015 p.

Lee, F. G., 1970, Eutrophication: Wisconsin University Water Resources Center, Occasional Paper No. 2, 39 p.

Lee, F. G., and Fruh, G. E., 1966, The aging of lakes: Industrial Water Engineering, 5 p.

Lee, F. G., Rast, Walter, and Jones, R. A., 1978, Eutrophication of water bodies; Insights for an age-old problem: Environmental Science and Technology, v. 12, no. 8, p. 900-908.

Martin, R. O. R., and Hanson, R. L., 1966, Reservoirs in the United States: U.S. Geological Survey Water-Supply Paper 1838, 115 p.

Palmer, C. M., 1977, Algae and water pollution: Cincinnati, U.S. Environmental Protection Agency, EPA-600/9-77-036, 123 p.

Patrick, Ruth, 1978, Effects of trace metals in the aquatic ecosystem: American Scientist, v. 66, p. 185-191.

Rast, W. R., and Lee, G. F., 1978, Summary analysis of the North American (U.S. Portion) OECD Eutrophication project; Nutrient loading-lake response relationships and trophic state indices; Corvallis, Oregon, U.S. Environmental Protection Agency, EPA-600/3-78-008, 454 p.

Sawyer, C. N., 1947, Fertilization of lakes by agricultural and urban drainage: New England Water Works Association, v. 61, no. 2, p. 109-127.

Skougstad, M. W., Fishman, M. J., Friedman, L. C., Erdmann, D. E., and Duncan, S. S., eds., 1979, Methods for determination of inorganic substances in water and fluvial sediments: U.S. Geological Survey Techniques of Water-Resources Investigations, Book 5, Chapter A1, 625 p.

U.S. Bureau of Reclamation, 1978, Statistical compilation of storage dams, dikes, and reservoirs on Bureau of Reclamation projects: Washington, D.C., U.S. Government Printing Office, 63 p.

U.S. Environmental Protection Agency, 1974, Dillon Reservoir--Blue River study, Colorado--June, July, and August 1973: Denver, U.S. Environmental Protection Agency Technical Investigations Branch, Region VIII, 82 p.

_____1975, Water quality analysis, Grand Lake, Shadow Mountain Lake, Lake Granby--Preliminary draft: Denver, Colo., U.S. Environmental Protection Agency Technical Investigations Branch, Region VIII, 92 p.

_____1976a, National interim primary drinking water regulations: Washington, D.C., U.S. Environmental Protection Agency Publication 5701a-76-003, 159 p.

_____1976b, Quality criteria for water: Washington, D.C., U.S. Environmental Protection Agency, 256 p.

_____1977, Green Mountain Reservoir-Lower Blue River study, Colorado, September 1976: Denver, U.S. Environmental Protection Agency, Technical Investigations Branch, Region VIII, 89 p.

U.S. Geological Survey, 1979, Water resources data for Colorado--Water year 1978: Volume 1. Missouri River basin, Arkansas River basin, and Rio Grande basin; Volume 2. Colorado River basin above Dolores River; Volume 3. Dolores River basin, Green River basin, and San Juan River basin: U.S. Geological Survey Water-Data Reports CO-78-1, CO-78-2, CO-78-3; will be available only from U.S. Department of Commerce, National Technical Information Service, Springfield, VA 22151.

Vollenweider, R. A., 1970, Scientific fundamentals of the eutrophication of lakes and flowing waters, with particular reference to nitrogen and phosphorus as factors in eutrophication: Paris, Organization for Economic Cooperation and Development, September 1970, 159 p.

_____1976, Advances in defining critical loading levels for phosphorus in lake eutrophication: Memorie dell' Istituto Italino di Idrobiologia, v. 33, p. 53-83.

Welch, P. S., 1948, Limnological methods: Philadelphia, The Blakiston Co., 370 p.

Wetzel, R. G., 1975, Limnology: Philadelphia, W. B. Saunders Co., 743 p.

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